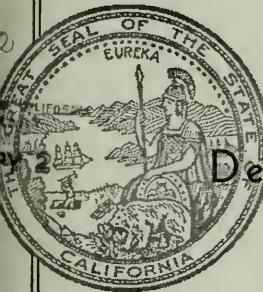


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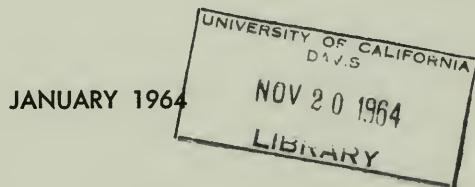
THE RESOURCES AGENCY OF CALIFORNIA  
Department of Water Resources

BULLETIN No. 116-2

116-2

# CRUSTAL STRAIN AND FAULT MOVEMENT INVESTIGATION

Faults and Earthquake Epicenters  
in California



JANUARY 1964

HUGO FISHER  
*Administrator*  
The Resources Agency of California

EDMUND G. BROWN  
*Governor*  
State of California

WILLIAM E. WARNE  
*Director*  
Department of Water Resources



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State of California  
THE RESOURCES AGENCY OF CALIFORNIA  
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## TABLE OF CONTENTS

	<u>Page</u>
LETTER OF TRANSMITTAL . . . . .	v
ORGANIZATION, DEPARTMENT OF WATER RESOURCES . . . . .	vi
ORGANIZATION, CONSULTING BOARD FOR EARTHQUAKE ANALYSIS . . . . .	vii
ACKNOWLEDGMENT . . . . .	viii
INTRODUCTION . . . . .	1
Discussion of Basic Terms . . . . .	3
Fault . . . . .	3
Focus . . . . .	4
Epicenter . . . . .	4
Magnitude . . . . .	5
Intensity . . . . .	5
PART 1, CALIFORNIA EARTHQUAKES . . . . .	7
Three "Outstanding" California Earthquakes . . . . .	10
January 9, 1857 . . . . .	10
March 26, 1872 . . . . .	10
April 18, 1906 . . . . .	10
California Earthquakes Magnitude 4 and Greater, 1934 through 1961 . . . . .	11
PART 2, BIBLIOGRAPHIC INDEX TO STATE FAULT MAP . . . . .	81
Key to Symbols in Bibliographic Index . . . . .	85
Bibliographic Index to State Fault Map . . . . .	86
Fault Map Source Index . . . . . (in pocket)	

PART 3, EARTHQUAKE EPICENTER AND FAULT MAP OF CALIFORNIA (in pocket)

Sheet 1, Northern Section, Notes and Inset Maps

Sheet 2, Central Section

Sheet 3, Southern Section

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RESOURCES AGENCY

ADDRESS REPLY TO  
P. O. Box 388  
Sacramento 2, Calif.



THE RESOURCES AGENCY OF CALIFORNIA  
DEPARTMENT OF WATER RESOURCES

1120 N. STREET, SACRAMENTO

March 5, 1964

The Honorable Edmund G. Brown, Governor, and  
Members of the Legislature of the  
State of California

Gentlemen:

I have the honor to transmit herewith Bulletin No. 116-2, "Crustal Strain and Fault Movement Investigation - Faults and Earthquake Epicenters in California." This report, the second of a series, presents seismological data on earthquakes in and near California and geological data on California's earthquake faults. These data are utilized by the department in planning and designing the State Water Facilities. Publication of these data has been prompted by our recognition of their potential usefulness to engineers, geologists, seismologists, actuaries, and others concerned with appraising earthquake risk and developing earthquake-resistant designs for engineering structures in California.

Sincerely yours,

A handwritten signature in black ink, appearing to read "William E. Warne".

Director

STATE OF CALIFORNIA  
THE RESOURCES AGENCY OF CALIFORNIA  
DEPARTMENT OF WATER RESOURCES

EDMUND G. BROWN, Governor  
HUGO FISHER, Administrator, The Resources Agency of California  
WILLIAM E. WARNE, Director, Department of Water Resources  
ALFRED R. GOLZE\*, Chief Engineer

- - - - -

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- - - - -

The investigation leading to this report  
was conducted under the direction  
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and

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logic structures; tectonics of Southern California and  
Baja California.

#### ACKNOWLEDGMENT

Data and consultation by federal, state, and private agencies and individuals have materially assisted the department in the preparation of this report on faults and earthquakes in California. The Department of Water Resources gratefully acknowledges the helpful cooperation of these agencies and their respective staffs. Data, earthquake bulletins, and geologic maps were furnished by personnel of the U. S. Geological Survey, California Division of Mines and Geology, the Seismological Laboratory of the California Institute of Technology, the Seismographic Stations of the University of California at Berkeley, and the U. S. Coast and Geodetic Survey.

The helpful cooperation of the following individuals merits special acknowledgment: Professor Hugo Benioff, California Institute of Technology for continuing consulting services and for his helpful review of this report; Professors Charles F. Richter and Clarence R. Allen, California Institute of Technology, and Dr. Pierre St. Amand, Naval Ordnance Test Station, China Lake, California, for supplying sets of IBM earthquake cards used in compiling epicenter data; Messrs. Charles W. Jennings and Rudolph Strand, California Division of Mines and Geology, for furnishing geologic maps and other help used in compiling the fault map; and Professor Don Tocher, University of California, Berkeley, for advice and consultation.

Anyone who can supply additional data or corrections is asked to send such information to the Department of Water Resources, Post Office Box 388, Sacramento 2, California.

## INTRODUCTION

Bulletin No. 116-2 is the second in a series of reports pertaining to the department's Crustal Strain and Fault Movement Investigation. The department has recognized the need for a readily accessible source of basic data on earthquakes in California for use in planning studies and final design stages of water resources development. This bulletin brings together, on a statewide basis, a comprehensive compilation of data on location of faults and earthquake epicenters. These and other seismologic, geologic, and earthquake engineering data are utilized in preparing estimates of the probability of occurrence of earthquakes and the damaging earthquake forces which should be anticipated at sites proposed for construction of the authorized State Water Facilities. Knowledge of these factors is required for the rational development of aseismic design criteria for hydraulic structures to obviate or mitigate any adverse effects of earthquakes at specific sites. The earthquake and fault data are also used in connection with the long-range planning of additional projects proposed for inclusion in the California Water Resources Development System.

The report is divided into three parts which are briefly described in the following paragraphs.

Part 1 of this report presents a tabulation of data on all earthquakes, Richter magnitude 4 and greater, which occurred in California and adjacent areas during the 28-year period from 1934 through 1961. Data on over 10,000 earthquakes smaller than magnitude 4,

which were recorded during this same period, have not been included in this tabulation or on the earthquake epicenter and fault map of California presented in Part 3. However, these data are available in the files of the Department of Water Resources.

Part 2 of the report is a bibliography of significant references used in compiling the fault map of California. An index map of the major sources of geologic data utilized in the fault map compilation has been included in the pocket at the back of the report.

Part 3 of the report is the Earthquake Epicenter and Fault Map of California which has been placed in the pocket at the back of the report. All faults classified as "active" by Dr. C. F. Richter\*, other faults thought to be active, and all other faults and fault systems which could be delineated at a map scale of 1:500,000 have been included on the map and are shown in red. Large areas of the map which appear devoid of faults may be true representations of actual conditions. However, it is highly probable that such areas signify either that detailed geologic mapping is not available, or that the faults in such areas have been obscured by alluvium, colluvium, and/or vegetation. Epicentral locations of all earthquakes, magnitude 4 and greater, which occurred in California during the period of record from 1934 through 1961, are shown in black on the map. Map margins have been marked off in degrees and minutes to facilitate cross-referencing between the map data and the earthquake epicenter tabulation. The Earthquake Epicenter and Fault Map is

\*Richter, C. F. "Elementary Seismology." W. H. Freeman and Company, San Francisco, p. 441. 1958.

divided into three sections. The northern section, Sheet 1, covers the general area from the California-Oregon border on the north to Point Arena. Sheet 1 also includes small-scale inset maps of California which show the approximate locations of the epicenters of major earthquakes of historic record, and the faults along which movement or surface rupture has been observed. The central section, Sheet 2, covers the area from Point Arena to Coalinga. The southern section, Sheet 3, covers the area from Coalinga to the California-Mexico International Boundary.

#### Discussion of Basic Terms

A few basic geological and seismological concepts related to commonly used technical terms are briefly discussed in the following paragraphs. Except as otherwise noted, the definitions within quotation marks which immediately follow basic terms were obtained from the "Glossary of Geology and Related Sciences" published by the American Geological Institute.

#### Fault

"A fracture or fracture zone along which there has been displacement of the two sides relative to one another parallel to the fracture. The displacement may be a few inches or many miles."

Active faults are those along which recurrence of fault movement is predicted. In the view of most authorities, abrupt release of accumulated strain energy in the rocks of the earth's crust by fault movement is the primary cause of California's earthquakes. The earthquake-producing fault slip almost always originates at depth

(usually 10 to 30 kilometers in California), and propagates along the fault in two dimensions as a spreading active area. The size of the active earthquake area increases with the size of the earthquake. In earthquakes smaller than magnitude 7, the break seldom reaches the surface. For larger shocks it reaches the surface and propagates horizontally up to several hundred miles depending upon the size of the earthquake. Movement along some faults apparently proceeds gradually, without accompanying earthquakes, as is shown by continuing movement on the active thrust fault in the Buena Vista Hills in Kern County.

#### Focus

The focus of an earthquake is the point within a fault at which slip begins. The focal depth of earthquakes in California is commonly from 10 to 30 kilometers. As movement along a fault proceeds rapidly outward from the focus, strain energy in the crust is converted into earthquake-producing elastic wave energy which first radiates from the fault surface and continues afterward to radiate from the entire strain zone until the conclusion of the fault movement.

#### Epicenter

"The point on the earth's surface directly above the focus of an earthquake."

Locations of earthquake epicenters are computed from earthquake recordings obtained at three (or more) seismograph stations. As a result of imperfect location of epicenters, angle of fault inclination other than vertical, and/or nonrecognition of fault surface

traces, earthquake epicenters do not necessarily coincide with traces of known faults. Absence of indicated faults in an area of numerous epicenters does not preclude their presence; rather, the available geologic mapping has not revealed any.

#### Magnitude

The definition of magnitude originally proposed by Dr. C. F. Richter is as follows:

"The magnitude of any shock is taken as the logarithm of the maximum trace amplitude, expressed in microns (thousandths of a millimeter), with which the standard short-period torsion seismometer (period  $T_0 = 0.8$  sec., magnification  $V = 2800$ , damping  $h = 0.8$  or nearly critical) would register that shock at an epicentral distance of 100 kilometers (62 miles)."<sup>\*</sup>

Subsequent attempts to relate magnitude to the total energy released by an earthquake in the form of elastic waves has resulted in some revision and redefinition of magnitude. Magnitude is intended to be an objective, instrumentally determined rating of the size of a given earthquake. Magnitude can be calculated from the wave amplitude recorded by seismographs at any distance from the source of a quake. Each upward step of one magnitude unit means a ten-fold increase in the amplitude of the recorded waves because the scale is logarithmic. The scale has no arbitrary "ceiling," but 8.9 appears to be the largest magnitude of any known earthquake.

#### Intensity

"A number describing the effects on an earthquake on man, on structures built by him, and on the earth's surface."

\*Richter, C. F. "An Instrumental Earthquake Magnitude Scale." Seismological Society of America Bulletin. Vol. 25, p. 7. 1935.

Intensity is a qualitative, noninstrumental rating of the degree of shaking at a specified place. The earthquake intensity at each locality within an area shaken by an earthquake is rated on the basis of an "earthquake intensity scale." The Modified Mercalli Intensity Scale of 1931 is the one most commonly used today in the United States. In that scale, the grades of intensity are indicated by Roman numerals from I to XII.

PART 1  
CALIFORNIA EARTHQUAKES



## CALIFORNIA EARTHQUAKES

California is located in the second most highly active seismic area in the United States, the first being Alaska. Major earthquakes in California pose a potential threat to hydraulic facilities throughout the State, including the authorized State Water Facilities. Therefore, appraisal of earthquake risk, including evaluation of the various hazards related to earthquakes, is an important factor in the location, design, construction, and operation of the various facilities of such an extensive project.

Most of the reported earthquakes in California are associated with major fault systems located in the following areas: the Coast Ranges in Central and Northern California; the Transverse Ranges and the Tehachapi Mountains between Central and Southern California; the Peninsular Ranges and Colorado Desert in Southern California; and the Basin and Range Province, including the eastern side of the Sierra Nevada.

The tabulated earthquake data presented herein provide comprehensive coverage for instrumentally located epicenters for only a very short span of time, viz., 1934 through 1961. Large-magnitude earthquakes which occurred between 1906 and 1934 have also been included in the tabulation because magnitudes and epicenter data were available; however, such data are not available for smaller quakes which occurred during this period. Epicenters and magnitudes of 29 major earthquakes which occurred during the period from 1769 to 1906 are not included in the tabulation because

instrumental data on these are not available. Of the 29 large-magnitude earthquakes which struck California in the period 1769 through 1906, three were "outstanding" (comparable to the San Francisco earthquake of 1906), eight were "great" (comparable to the Kern County earthquake of 1952), and 20 were "very strong" (comparable to the Santa Barbara earthquake of 1925).

Three "Outstanding" California Earthquakes

The following are the three largest earthquakes which have struck California during recent historic time; all had estimated magnitudes over 8.

January 9, 1857, on San Andreas fault near Fort Tejon

The available evidence indicates that this earthquake was at least comparable in magnitude and displacement to the 1906 shock. Ground rupture along the San Andreas fault could be traced from San Bernardino on the south to Cholame, San Luis Obispo County, on the north. Review of old records indicates rupture may have extended as far south as Whitewater, Riverside County.

March 26, 1872, on unnamed fault of Sierra Nevada fault system in Owens Valley

The measured maximum horizontal and vertical offsets were 20 and 23 feet, respectively. Surface ruptures were observed over a distance of approximately 70 miles.

April 18, 1906, on San Andreas fault near San Francisco

The Richter magnitude assigned to this quake is 8.3. The maximum horizontal displacement was 21 feet in alluvial materials.

The maximum vertical displacement was 3 feet. The linear extent of fault movement during this earthquake was at least 190 miles and is thought by many authorities to have continued northward from Point Arena under the ocean to a total of 270 miles.

California Earthquakes Magnitude 4 and Greater, 1934 through 1961

Data on earthquakes in California and parts of Nevada and Mexico, Richter magnitude 4.0 and greater, have been tabulated from IBM earthquake data cards and are presented herein. The epicentral locations of the earthquakes are shown on the Earthquake Epicenter and Fault Map of California at the back of this report. In the tabulation, the earthquake epicenters are listed in the order of increasing latitude. Headings for the published data are arranged in the following manner:

LATITUDE	LONGITUDE	DATE	TIME	
DEG. MIN.	DEG. MIN.	MO. DAY YR.	HR. MIN. SEC.	QUALITY MAGNITUDE

LATITUDE - Degrees and minutes north.

LONGITUDE - Degrees and minutes west.

DATE - Month, day, and year.

TIME - Hour, minute, and second (Greenwich Civil Time).\*

QUALITY - Relative accuracy of plot of epicentral locations.

"A" - Specially investigated.

"B" - Probably within 5 kilometers (3.1 miles).

"C" - Probably within 15 kilometers (9.3 miles).

"D" - Very rough.

MAGNITUDE - The rating of the earthquake on Richter scale.

\*By international custom, Greenwich Civil Time is used in technical reports on earthquakes. Pacific Standard Time is eight hours behind Greenwich Civil Time.

This tabulation of earthquake data includes portions of Nevada and Mexico in order to give greater coverage along the borders of the State. Most of these out-of-state epicenters are not plotted on the Fault and Earthquake Epicenter Map of California at the back of the report. The map shows only the locations of the first or largest shock at any specific location; however, the available data for smaller or subsequent earthquakes at that location have been included in the printed tabulation. Data are not available for a few shocks, mostly aftershocks; these, therefore, are not included in the tabulation.

Where blanks are found within the various columns, precise data were not available in published reports. Where the minute columns have been left blank, the locations of the earthquake epicenters are considered to be in the general area of the indicated latitude and longitude divisions.

The Seismological Laboratory at Pasadena and the Seismograph Stations of the University of California at Berkeley at times have listed the same shocks in their bulletins, but with slight differences in calculated epicentral locations and magnitudes. In such instances, the "Quality of Plot," as indicated by the respective institutions, was the principal criterion used in choice of data for inclusion in this report.

EARTHQUAKE EPICENTERS

(Magnitude 4.0 and greater,  
1934-1961, inclusive)



## EARTHQUAKE EPICENTERS

1934 - 1961

LATITUDE DEG	LONGITUDE DEG	DATE MO DAY YR	TIME HR MIN SEC	QUALITY (ACCURACY)	MAGNITUDE
31	114	05/28/34	03 32	D	4.
31	114	11/02/34	18 49	D	5.
31	114	11/02/34	19 42	D	4.
31	114	11/14/34	14 12	D	4.
31	114	11/14/34	14 31	D	4.
31	114	06/08/35	04 31	D	4.
31	114	04/24/39	21 15	D	4.
31	114	04/08/41	18 10 18	D	4.
31	114	04/09/41	15 50 00	D	4.
31	114	04/09/41	16 09 00	D	4.5
31	114	04/09/41	17 08 30	D	6.
31	114	04/09/41	17 39 42	D	5.
31	114	04/11/41	23 26 1	D	4.
31	114	07/04/57	23 27 12		4.6
31	115	04/21/32	23 49 55	D	4.0
31	115	12/30/34	13 52	D	6.
31	115	12/30/34	14 30	D	4.5
31	115	12/30/34	15 05	D	4.5
31	115	12/30/34	15 34	D	4.5
31	115	12/30/34	18 24	D	4.
31	115	12/30/34	18 38	D	4.5
31	115	12/30/34	19 23	D	4.5
31	115	01/04/35	21 59	D	4.
31	115	04/05/35	23 40	D	4.
31	115	05/26/40	08 50	D	4.5
31	115	06/27/40	07 05	D	4.
31	115	02/23/41	08 12	D	4.
31	115	03/07/41	02 37	D	4.
31	115	09/16/49	15 45	D	4.8
31	115	09/16/49	20 45	D	5.1
31	117	09/02/51	16 27 32		5.2
31	00 114	05/14/34	13 14	D	5.5
31	00 116	10/27/44	06 32 48	D	4.0
31	00 116	10/27/44	12 27 00	D	4.2
31	00 116	10/28/44	04 01 29	D	4.9
31	18 115	04/20/45	22 32 06	D	4.3
31	26 115	09/07/45	14 45 16	C	4.4
31	30 113	06/23/51	03 32 40		4.9
31	30 113	10/22/52	01 35 52	D	4.1
31	30 113	10/22/52	19 46 36	D	5.1

See page II for explanation of terms.

## EARTHQUAKE EPICENTERS

1934 - 1961

LATITUDE DEG	LATITUDE MIN	LONGITUDE DEG	LONGITUDE MIN	DATE MO DAY YR	TIME HR MIN SEC	QUALITY (ACCURACY)	MAGNITUDE
31	30	114	00	04/22/45	09 45 48	D	5.3
31	30	114	00	04/22/45	22 13 18	D	4.9
31	30	115	30	02/14/56	14 45 32	C	5.0
31	30	115	30	02/14/56	18 33 34	C	6.3
31	30	115	30	02/14/56	18 39 04	D	4.9
31	30	115	30	02/14/56	18 40 32	D	4.9
31	30	115	30	02/14/56	18 41 15	D	4.9
31	30	115	30	02/14/56	22 07	D	4.7
31	30	115	30	02/15/56	01 20 38	C	6.4
31	30	115	30	02/15/56	01 25 11	C	4.9
31	30	115	30	02/15/56	01 37	D	4.5
31	30	115	30	02/15/56	02 28 39	C	5.3
31	30	115	30	02/15/56	02 40	D	4.5
31	30	115	30	02/15/56	06 00	D	4.6
31	30	115	30	02/15/56	06 43	D	4.5
31	30	115	30	02/15/56	07 04	D	4.6
31	30	115	30	02/15/56	07 07 47	C	5.2
31	30	115	30	02/15/56	08 35 54	C	5.0
31	30	115	30	02/15/56	09 31	D	4.5
31	30	115	30	02/15/56	18 54 44	C	4.9
31	30	115	30	02/16/56	01 30	D	4.6
31	30	115	30	02/16/56	05 53 02	C	4.9
31	30	115	30	02/16/56	08 12 28	C	5.0
31	30	115	30	02/17/56	01 13	D	4.5
31	30	115	30	02/17/56	03 57	D	4.5
31	30	115	30	02/17/56	06 25	D	4.7
31	30	115	30	02/17/56	09 25 00	C	4.9
31	30	115	30	02/17/56	10 40	D	4.7
31	30	115	30	02/18/56	15 11	D	4.6
31	30	115	30	02/19/56	01 58	D	4.5
31	30	115	30	02/19/56	06 54	D	4.7
31	30	115	30	02/21/56	02 50	D	4.7
31	30	115	30	02/21/56	23 00	D	4.6
31	30	115	30	02/24/56	13 17	D	4.5
31	30	115	30	02/24/56	14 04	D	4.7
31	30	115	30	02/24/56	16 59	D	4.7
31	30	115	30	02/24/56	20 22	D	4.8
31	30	115	30	02/25/56	06 04	D	4.6
31	30	115	30	02/25/56	08 08 51	C	5.1
31	30	115	30	02/25/56	19 53	D	4.5

See page II for explanation of terms.

## EARTHQUAKE EPICENTERS

1934 - 1961

LATITUDE DEG	LATITUDE MIN	LONGITUDE DEG	LONGITUDE MIN	DATE MO DAY YR	TIME HR MIN SEC	QUALITY (ACCURACY)	MAGNITUDE
31	30	115	30	02/25/56	22 35	D	4.8
31	30	115	30	02/26/56	05 49	D	4.7
31	30	115	30	02/26/56	08 18	D	4.5
31	30	115	30	02/29/56	09 01	D	4.7
31	30	115	30	03/01/56	02 53	D	4.8
31	30	115	30	03/03/56	18 23	D	5.1
31	30	115	30	03/07/56	13 36	D	4.5
31	30	115	30	03/07/56	15 29	D	4.8
31	30	115	30	03/09/56	00 32	D	5.0
31	30	115	30	03/09/56	04 25 01	C	4.9
31	30	115	30	03/10/56	14 12 54	C	5.0
31	30	115	30	03/14/56	05 29 34	C	4.9
31	30	115	30	03/14/56	15 49	D	4.8
31	30	115	30	03/16/56	10 33	D	4.6
31	30	115	30	03/16/56	10 52	D	4.5
31	30	115	30	03/16/56	16 29	D	4.5
31	30	115	30	03/17/56	01 27	D	4.6
31	30	115	30	03/31/56	07 27	D	4.7
31	30	115	30	04/02/56	19 47 36		4.5
31	30	115	30	04/12/56	00 30	C	4.3
31	30	115	30	04/19/56	05 59	C	4.0
31	30	115	30	04/22/56	23 07	C	4.3
31	30	115	30	04/23/56	14 17	C	4.3
31	30	115	30	04/25/56	09 08 29	C	4.7
31	30	115	30	05/07/56	08 39	C	4.2
31	30	115	30	05/09/56	12 52	C	4.4
31	30	115	30	05/10/56	16 13	C	4.2
31	30	115	30	06/07/56	03 50	C	4.0
31	30	115	30	06/20/56	20 15	C	4.3
31	30	115	30	06/28/56	00 05 11	C	4.0
31	30	115	30	07/04/56	21 41	C	4.7
31	30	115	30	08/03/56	04 27	C	4.6
31	30	115	30	08/25/56	15 57 43	C	5.0
31	30	115	30	03/13/58	23 15 00	D	4.3
31	30	115	30	01/25/61	07 17 42	D	4.5
31	30	116	00	11/13/34	14 22	D	4.
31	30	116	00	10/21/54	07 51	D	4.3
31	30	116	00	10/24/54	03 11	D	4.3
31	30	116	00	10/24/54	04 11	D	4.4
31	30	116	00	10/24/54	05 31	D	4.0

See page II for explanation of terms.

## EARTHQUAKE EPICENTERS

1934 - 1961

LATITUDE	LONGITUDE	DATE	TIME	QUALITY	MAGNITUDE
DEG	MIN	MO DAY YR	HR MIN SEC	(ACCURACY)	
31 30	116 00	10/24/54	09 44 08	D	6.0
31 30	116 00	10/24/54	10 42	D	4.5
31 30	116 00	10/24/54	11 21 24	D	5.4
31 30	116 00	10/24/54	11 30	D	4.3
31 30	116 00	10/24/54	14 06 08	D	4.7
31 30	116 00	10/24/54	18 11	D	4.2
31 30	116 00	10/24/54	20 59	D	4.1
31 30	116 00	10/25/54	00 51	D	4.3
31 30	116 00	10/25/54	06 30	D	4.4
31 30	116 00	11/12/54	12 26 47		6.3
31 30	116 00	11/12/54	12 34	D	4.9
31 30	116 00	11/12/54	13 07	D	4.3
31 30	116 00	11/12/54	13 16 42	D	5.0
31 30	116 00	11/12/54	13 45	D	4.3
31 30	116 00	11/12/54	13 56	D	4.3
31 30	116 00	11/12/54	14 33	D	4.3
31 30	116 00	11/12/54	14 34	D	4.4
31 30	116 00	11/12/54	15 48	D	4.7
31 30	116 00	11/12/54	17 24	D	4.6
31 30	116 00	11/12/54	20 19	D	4.8
31 30	116 00	11/12/54	22 21	D	4.5
31 30	116 00	11/12/54	23 38	D	4.2
31 30	116 00	11/12/54	23 51	D	4.1
31 30	116 00	11/13/54	10 19	D	4.6
31 30	116 00	11/13/54	16 23	D	4.5
31 30	116 00	11/14/54	00 57	D	4.8
31 30	116 00	11/14/54	02 17	D	4.3
31 30	116 00	11/14/54	05 36 19	D	5.4
31 30	116 00	11/14/54	14 10	D	4.0
31 30	116 00	11/14/54	16 04	D	4.2
31 30	116 00	11/14/54	23 05	D	4.2
31 30	116 00	11/17/54	11 55	D	4.9
31 30	116 00	11/17/54	15 46	D	4.2
31 30	116 00	11/25/54	14 06	D	4.6
31 30	116 00	11/27/54	19 38	D	4.2
31 30	116 00	11/28/54	13 50	D	4.1
31 30	116 00	11/29/54	14 07	D	4.2
31 30	116 00	12/11/54	07 33	D	4.4
31 30	116 00	12/13/54	19 22	D	4.4
31 30	116 12	01/15/53	10 31 43	D	4.0

See page II for explanation of terms.

## EARTHQUAKE EPICENTERS

1934 - 1961

LATITUDE	LONGITUDE	DATE	TIME	QUALITY	MAGNITUDE		
DEG	MIN	DEG	MIN	MO DAY YR	HR MIN SEC	(ACCURACY)	
31	30	116 30	02/18/39		05 57	D	4.
31	30	116 30	10/17/54		22 57 18		5.7
31	30	117 42	10/12/40		03 45 42	D	4.
31	30	118 36	07/16/56		00 39	D	4.9
31	35	115 35	05/22/56		17 09	C	4.1
31	35	115 40	02/10/56		04 18 15	C	5.0
31	35	115 40	02/11/56		06 24 25	C	5.4
31	35	115 40	03/03/56		06 34 03	C	4.9
31	35	115 40	03/03/56		18 23 13	C	5.1
31	35	115 40	04/04/56		07 38	C	4.4
31	35	115 40	04/04/56		14 59	C	4.3
31	35	115 40	04/15/56		00 51 33	C	4.0
31	35	115 40	04/24/56		00 15	C	4.4
31	35	115 40	05/04/56		03 09	C	4.4
31	35	115 40	05/14/56		14 52 22	C	4.6
31	35	115 40	05/26/56		10 18	C	4.3
31	35	115 40	06/24/56		03 54 17	C	4.2
31	35	115 40	09/23/56		08 51 55	C	4.9
31	35	115 40	09/23/56		08 55 24	C	4.6
31	36	115 06	02/09/35		07 53	D	4.
31	36	115 12	05/31/54		08 06 24	D	5.2
31	36	115 36	05/12/45		07 33	D	5.2
31	36	115 42	02/09/56		15 01 33	D	5.3
31	36	115 42	02/09/56		16 29 53	D	5.8
31	36	115 42	02/09/56		17 06 21	C	4.9
31	36	115 48	03/26/53		12 42 18	D	4.0
31	36	116 06	11/26/55		17 36 00	D	5.4
31	36	116 06	12/01/55		23 19 24	D	4.3
31	36	116 06	12/06/55		09 11 24	D	4.1
31	39	115 47	07/31/61		21 28 58	C	4.0
31	40	115 05	08/18/34		15 01	C	4.5
31	40	115 05	01/15/35		07 38	D	4.
31	40	115 05	07/21/35		00 46	D	4.
31	40	115 05	04/29/36		08 50	C	5.
31	40	115 05	07/04/39		21 44	C	4.5
31	40	115 05	07/07/40		18 43 00	C	5.
31	40	115 05	12/07/40		22 16 27	C	6.
31	40	115 05	12/09/40		00 35 02	C	4.
31	40	115 05	12/09/40		10 19 12	C	4.
31	40	115 18	06/14/59		06 13 35	D	4.6

See page II for explanation of terms.

## EARTHQUAKE EPICENTERS

1934 - 1961

LATITUDE DEG	LATITUDE MIN	LONGITUDE DEG	LONGITUDE MIN	DATE MO DAY YR	TIME HR MIN SEC	QUALITY (ACCURACY)	MAGNITUDE
31	41	115	18	06/16/46	00 39 35	C	4.2
31	42	115	00	04/19/54	01 20 48	D	4.0
31	42	115	00	09/10/54	12 11 18	D	4.2
31	42	115	06	12/25/36	08 31	D	4.0
31	42	115	06	01/10/39	03 26	D	4.0
31	42	115	06	01/22/39	04 51	D	4.0
31	42	115	06	01/22/39	04 59	D	4.5
31	42	115	06	01/28/39	07 22	D	4.5
31	42	115	06	11/06/39	16 15	D	4.0
31	42	115	06	12/14/39	12 17 18	D	4.5
31	42	115	06	09/12/40	00 06 30	D	4.0
31	42	115	06	09/12/40	00 15 30	D	4.5
31	42	115	06	01/09/41	10 28 42	D	5.5
31	42	115	06	02/05/41	13 33 06	D	5.0
31	42	115	06	04/08/46	19 45 12	D	4.2
31	42	115	12	08/11/55	17 46 20	D	4.8
31	42	115	54	02/09/56	14 34	D	5.6
31	42	115	54	02/09/56	14 36	D	4.5
31	42	115	54	02/09/56	14 40	D	4.6
31	42	115	54	02/09/56	14 45	D	4.7
31	42	115	54	02/09/56	14 48	D	4.8
31	42	115	54	02/09/56	14 50	D	4.6
31	42	115	54	02/09/56	15 25	D	4.5
31	42	115	54	02/09/56	15 40	D	4.7
31	42	115	54	02/09/56	15 48	D	4.5
31	42	115	54	02/09/56	16 11	D	4.6
31	42	115	54	02/09/56	17 23	D	4.7
31	42	115	54	02/09/56	17 47	D	4.6
31	42	115	54	02/09/56	17 50	D	4.7
31	42	115	54	02/09/56	21 07	D	4.7
31	42	115	54	02/09/56	23 56	D	4.5
31	42	115	54	02/10/56	00 05	D	4.6
31	42	115	54	02/10/56	00 12	D	4.5
31	42	115	54	02/10/56	00 32	D	4.5
31	42	115	54	02/10/56	02 53	D	4.5
31	42	115	54	02/10/56	03 57	D	4.5
31	42	115	54	02/10/56	04 20	D	4.6
31	42	115	54	02/10/56	04 23	D	4.5
31	42	115	54	02/10/56	04 39	D	4.5
31	42	115	54	02/10/56	05 55	D	4.6

See page II for explanation of terms.

## EARTHQUAKE EPICENTERS

1934 - 1961

LATITUDE		LONGITUDE		DATE			TIME			QUALITY (ACCURACY)	MAGNITUDE
DEG	MIN	DEG	MIN	MO	DAY	YR	HR	MIN	SEC		
31	42	115	54	02	10	56	07	33		D	4.7
31	42	115	54	02	10	56	11	41		D	4.5
31	42	115	54	02	10	56	12	30		D	4.5
31	42	115	54	02	10	56	13	42		D	4.6
31	42	115	54	02	10	56	19	48		D	4.5
31	42	115	54	02	11	56	05	19		D	5.0
31	42	115	54	02	11	56	06	31		D	4.7
31	42	115	54	02	11	56	16	59		D	4.6
31	42	116	30	01	12	41	12	08		D	4.
31	42	116	54	11	21	52	19	26	18	D	4.1
31	42	117	12	02	27	37	01	29		D	5.
31	45	115	55	02	09	56	14	16	24	C	4.7
31	45	115	55	02	09	56	14	32	38	C	6.8
31	45	115	55	02	09	56	14	46	23	C	4.9
31	45	115	55	02	09	56	15	24	26	C	6.1
31	45	115	55	02	09	56	15	45	04	C	4.9
31	45	115	55	02	09	56	16	59	53	C	5.7
31	45	115	55	02	09	56	18	48	45	C	5.7
31	45	115	55	02	10	56	14	30	12	C	4.9
31	45	115	55	02	10	56	15	09	29	C	5.0
31	45	115	55	02	10	56	18	12	54	C	5.5
31	45	115	55	02	11	56	02	57	46	C	5.1
31	45	115	55	02	11	56	06	11	24	C	5.0
31	45	115	55	03	09	56	00	32	40	C	5.0
31	45	115	55	05	23	56	00	14		C	4.2
31	45	115	55	05	24	56	09	52		C	4.0
31	45	115	55	06	01	56	00	17		C	4.2
31	45	116	30	04	29	35	20	08		C	5.
31	45	116	30	04	29	35	21	49		D	4.
31	45	116	30	05	01	35	00	07		D	4.5
31	45	116	30	05	01	35	03	52		D	4.
31	45	116	30	05	01	35	06	55		D	4.
31	45	116	30	05	01	35	18	23		C	4.
31	45	116	30	05	01	35	18	25		C	4.
31	47	115	55	12	22	56	05	18	00	C	4.5
31	48	115	00	05	02	49	00	26	12	D	4.1
31	48	115	42	01	12	60	23	15	00	D	4.1
31	48	115	54	01	18	56	19	57	24	D	4.1
31	48	116	06	10	10	53	18	49	06	D	5.0
31	49	115	27	04	06	47	08	10	59	C	4.9

See page II for explanation of terms.

## EARTHQUAKE EPICENTERS

1934 - 1961

LATITUDE DEG	LATITUDE MIN	LONGITUDE DEG	LONGITUDE MIN	DATE MO DAY YR	TIME HR MIN SEC	QUALITY (ACCURACY)	MAGNITUDE
31	50	116	00	04/28/56	06 41	D	4.3
31	50	116	00	05/10/56	11 48 54	C	5.0
31	50	116	00	06/07/56	06 04	C	4.1
31	50	116	20	06/26/32	10 32 22	D	4.0
31	50	116	20	06/26/32	18 32 22	D	4.0
31	50	116	20	06/27/32	01 46 43	D	4.0
31	50	116	20	06/27/32	02 07 20	D	4.5
31	50	116	20	06/27/32	02 16 09	D	4.0
31	50	116	20	06/27/32	09 46 43	D	4.0
31	50	116	20	06/27/32	10 07 20	D	4.5
31	50	116	20	06/27/32	10 16 09	D	4.0
31	57	115	40	05/02/61	06 26 17	C	4.5
31	58	116	13	02/18/55	15 27 28	D	4.7
31	58	116	18	05/31/61	07 23 39	C	4.0
31	59	115	12	02/24/35	01 45	C	6.0
31	59	115	12	02/24/35	02 10	C	4.0
31	59	115	12	02/24/35	08 20	C	4.5
31	59	115	12	02/24/35	14 19	C	4.0
31	59	115	12	02/24/35	17 10	C	4.0
31	59	115	12	02/24/35	19 32	C	4.0
31	59	115	12	02/24/35	21 33	C	4.0
31	59	115	12	02/25/35	16 58	C	4.0
31	59	115	12	02/26/35	17 35	C	4.0
31	59	115	12	02/27/35	00 00	C	4.0
31	59	115	12	02/27/35	04 46	C	4.0
31	59	115	12	03/01/35	04 21	C	4.5
31	59	115	12	03/01/35	23 10	C	4.5
31	59	115	12	03/07/35	19 11	C	4.0
31	59	115	12	03/22/35	03 29	C	4.0
31	59	115	12	03/22/35	04 37	C	4.0
31	59	115	12	04/06/35	16 41	C	4.5
31	59	115	12	04/21/35	05 31	C	4.5
31	59	115	12	04/21/35	05 35	C	4.0
31	59	115	12	04/21/35	05 49	C	4.0
31	59	115	12	04/21/35	06 04	C	4.0
31	59	115	12	04/28/35	11 25	C	4.0

See page II for explanation of terms.

## EARTHQUAKE EPICENTERS

1934 - 1961

LATITUDE DEG	LATITUDE MIN	LONGITUDE DEG	LONGITUDE MIN	DATE MO DAY YR	TIME HR MIN SEC	QUALITY (ACCURACY)	MAGNITUDE
32		112		11/02/56	10 38 55		5.
32		113		02/02/50	10 37 24		4.2
32		113		04/12/51	06 20 10	D	4.2
32		113		07/04/57	22 25 13		4.8
32		114		10/03/35	18 59	D	4.
32		114		07/05/57	00 58 00		4.7
32		114	45	12/31/34	18 45 45		7.0
32		115		11/21/15	00 13 42		7.1
32		115		04/03/34	17 53	D	4.
32		115		07/17/34	11 38	D	4.
32		115		02/17/35	11 47	D	4.
32		115		08/14/45	02 08 24	D	4.0
32		115		08/14/45	02 20 12	D	4.4
32		115		05/04/55	13 14	D	4.0
32	00	113	00	02/03/50	15 51 31	D	4.3
32	00	113	00	02/03/50	21 22 13	D	4.3
32	00	115	00	06/04/48	07 27	D	4.6
32	00	115	00	05/28/58	07 48 18	D	4.5
32	00	115	06	01/05/56	11 15 24	D	4.1
32	00	115	12	05/18/47	00 25 31	D	4.3
32	00	115	30	02/20/45	09 35 48	D	4.0
32	00	115	30	06/21/47	08 09 37	D	4.8
32	00	115	30	06/20/51	22 35 54	D	4.3
32	00	115	42	05/30/46	16 59 38	D	4.1
32	00	116	00	07/19/54	20 01 54	D	4.8
32	00	116	22	08/20/61	12 52 46	C	4.0
32	00	117	00	04/27/42	11 27 54	D	4.
32	00	117	00	02/11/49	09 57 25	D	4.0
32	00	117	04	06/23/39	20 48	C	4.5
32	00	117	30	05/01/39	20 22	B	4.
32	00	117	30	05/01/39	23 53	B	5.
32	00	117	30	05/01/39	23 57	B	4.5
32	00	117	30	05/03/39	08 28	B	4.
32	00	117	30	05/03/39	23 58	B	4.5
32	00	117	30	06/24/39	16 27	B	5.
32	00	117	30	06/25/39	01 09	C	4.
32	00	118	30	07/15/43	21 38	D	4.
32	02	115	50	01/08/32	02 34 43	C	4.0
32	02	115	50	01/28/32	17 17 49	C	4.5
32	02	116	19	09/20/61	10 36 03	C	4.2

See page II for explanation of terms.

## EARTHQUAKE EPICENTERS

1934 - 1961

LATITUDE DEG	LATITUDE MIN	LONGITUDE DEG	LONGITUDE MIN	DATE MO DAY YR	TIME HR MIN SEC	QUALITY (ACCURACY)	MAGNITUDE
32	02	116	25	08/20/61	04 28 43	C	4.6
32	03	116	09	03/01/45	11 19 58	C	4.4
32	03	116	10	02/06/58	11 15 30	C	4.5
32	04	115	14	04/27/59	17 45 07	D	4.5
32	05	116	40	09/27/34	21 40	C	4.
32	05	116	40	11/25/34	08 18	C	5.
32	05	116	40	10/12/38	12 31	C	4.
32	05	117	00	05/10/48	03 49 25	C	4.0
32	05	117	50	09/13/40	14 45 48	B	4.5
32	06	114	18	09/13/40	11 49 57	C	5.
32	06	116	00	02/03/60	08 37 18	D	4.5
32	06	116	30	01/08/37	12 46	C	4.
32	06	116	36	01/07/50	09 37 35	D	4.0
32	07	115	17	03/16/52	19 59 15	C	4.1
32	07	115	17	03/16/52	22 11 02	C	4.5
32	07	116	05	07/09/51	09 06 22	C	4.2
32	08	115	50	06/10/61	02 17 42	C	4.1
32	10	116	25	09/17/50	19 43 30	C	4.5
32	10	117	40	10/29/35	10 17	C	4.5
32	11	118	54	02/26/48	03 59 19	C	4.0
32	11	118	54	02/27/48	06 21 31	C	4.9
32	12	112	30	06/18/61	08 12 07	C	4.7
32	12	115	42	10/16/54	08 05 18	C	4.0
32	12	116	12	03/03/57	11 06 03	C	4.4
32	12	116	33	11/04/49	20 42 38	C	5.7
32	12	116	33	11/05/49	04 35 24		5.1
32	12	116	33	11/05/49	20 02 07		4.0
32	12	116	33	11/06/49	23 05 10		4.0
32	12	116	33	11/11/49	13 54 00		4.2
32	15	115	10	06/03/38	14 38	C	4.
32	15	115	10	06/06/38	12 35	C	4.
32	15	115	30	12/30/34	13 52 14		6.5
32	15	115	30	12/15/57	21 16 41	C	4.6
32	15	115	40	04/29/32	16 52 33	D	4.0
32	15	115	45	12/01/58	03 21 18	B	5.8
32	15	115	45	12/01/58	03 31		4.1
32	15	115	45	12/01/58	03 40		4.0
32	15	115	45	12/01/58	03 50		5.0
32	15	115	45	12/01/58	04 26		4.8
32	15	115	45	12/01/58	06 02		5.5

See page II for explanation of terms.

## EARTHQUAKE EPICENTERS

1934 - 1961

LATITUDE		LONGITUDE		DATE	TIME	QUALITY	MAGNITUDE
DEG	MIN	DEG	MIN	MO DAY YR	HR MIN SEC	(ACCURACY)	
32	15	115	45	12/01/58	06 03		4.6
32	15	115	45	12/01/58	08 43		4.1
32	15	115	45	12/02/58	00 54		4.7
32	15	115	45	12/02/58	09 57		4.3
32	15	115	45	12/02/58	11 56		4.1
32	15	115	45	12/02/58	13 58		4.2
32	15	115	45	12/03/58	19 06		4.1
32	15	115	45	12/04/58	01 42		4.2
32	15	115	45	12/06/58	03 24		4.4
32	15	115	45	12/06/58	03 31		4.5
32	15	115	45	12/08/58	00 51		4.4
32	15	115	45	12/08/58	00 52		4.5
32	15	115	45	12/09/58	19 22		4.1
32	15	115	45	12/14/58	00 07		4.2
32	15	115	45	12/15/58	06 21		4.6
32	15	115	45	12/17/58	13 30		4.3
32	15	115	45	12/19/58	15 33		4.0
32	15	115	45	12/20/58	00 06		4.3
32	15	115	45	12/20/58	00 07		4.7
32	15	115	45	12/20/58	03 05		4.5
32	15	115	45	12/23/58	06 53		4.0
32	15	115	45	12/24/58	20 27		4.0
32	15	115	45	12/25/58	01 27		4.6
32	15	115	45	03/22/61	15 11 15	C	4.0
32	16	115	42	06/11/60	21 36 56	C	4.5
32	18	115	18	02/01/54	04 23 57	D	5.2
32	18	115	18	02/01/54	04 32 02	D	5.6
32	18	115	18	02/01/54	05 10 07	D	4.6
32	18	115	18	02/01/54	13 05 29	D	5.1
32	18	115	31	07/25/57	12 32 47	C	4.3
32	18	115	42	02/28/61	21 22 54	D	4.4
32	20	115	00	04/25/55	10 43 08	D	5.2
32	20	115	45	12/15/38	00 02	C	4.
32	20	116	28	01/13/35	02 24	C	4.
32	23	116	00	01/03/56	14 24 01	C	4.7
32	24	115	06	12/07/50	05 04 54	D	4.1
32	25	115	35	01/03/36	14 07	C	4.
32	27	115	37	06/20/35	07 24	C	4.
32	27	115	37	04/17/38	03 47	C	4.
32	27	115	37	01/31/39	16 16	C	4.

See page II for explanation of terms.

## EARTHQUAKE EPICENTERS

1934 - 1961

LATITUDE DEG	LATITUDE MIN	LONGITUDE DEG	LONGITUDE MIN	DATE MO DAY YR	TIME HR MIN SEC	QUALITY (ACCURACY)	MAGNITUDE
32	27	115	37	03/21/39	13 51	C	4.0
32	27	115	37	03/25/39	02 59	C	4.0
32	30	113	30	03/15/58	08 34 04		4.9
32	30	115		02/24/35	01 45 10		5.3
32	30	115	00	01/12/34	01 26	D	4.0
32	30	115	20	02/11/34	18 01	C	4.0
32	30	115	30	01/01/27	08 16 45		5.8
32	30	115	30	02/09/61	17 50 42	D	4.8
32	30	115	30	05/06/61	01 42 12	D	4.1
32	30	115	30	05/06/61	02 08 06	D	4.1
32	30	115	40	02/12/32	02 30 21	C	4.0
32	30	115	54	06/25/41	17 15 00	D	4.0
32	30	118	33	02/24/48	08 15 10	C	5.3
32	32	116	11	02/22/39	10 30	C	4.0
32	32	116	11	11/12/39	18 49 00	C	4.0
32	34	115	27	09/12/61	19 18 46	C	4.8
32	34	115	27	09/12/61	19 20 38	C	4.1
32	35	115	32	04/02/47	15 15 39	C	4.2
32	35	117	48	04/19/39	07 41	B	4.5
32	36	115	42	12/19/58	14 37	D	4.1
32	36	116	00	10/12/36	13 56	D	4.0
32	36	116	00	10/12/36	17 07	D	4.0
32	36	116	06	12/24/41	07 30	D	4.5
32	36	116	19	06/15/46	19 46 53	C	4.8
32	37	118	12	04/28/38	06 07	B	4.5
32	42	115	07	01/04/34	21 53	C	4.5
32	42	115	51	11/01/41	14 24 34	C	4.0
32	43	116	02	06/01/59	16 35 36	C	4.6
32	43	117	50	11/06/50	20 55 46	B	4.4
32	44	115	26	03/17/43	00 40 44	C	4.5
32	44	115	27	04/29/40	08 48 00	C	4.0
32	44	115	27	05/19/40	04 36 40	B	7.1
32	44	115	27	05/19/40	04 48 47	C	4.5
32	44	115	27	05/19/40	04 55	C	5.5
32	44	115	27	05/19/40	05 04	C	4.5
32	44	115	27	05/19/40	05 44 37	C	4.5
32	44	115	27	05/19/40	05 51 34	C	5.5
32	44	115	27	05/19/40	05 57 17	C	4.5
32	44	115	27	05/19/40	06 17 42	C	4.5
32	44	115	27	05/19/40	06 33 20	C	5.0

See page II for explanation of terms.

## EARTHQUAKE EPICENTERS

1934 - 1961

LATITUDE	LONGITUDE	DATE	TIME	QUALITY	MAGNITUDE
DEG	MIN	DEG	MIN	(ACCURACY)	
32 44	115 27	05/19/40	06 35 40	C	5.5
32 44	115 27	05/19/40	07 01	C	4.5
32 44	115 27	05/19/40	08 55	C	4.
32 44	115 27	05/19/40	09 18	C	4.
32 44	115 27	05/19/40	12 09 27	C	4.
32 44	115 27	05/19/40	13 06 43	C	4.
32 44	115 27	05/19/40	13 40 58	C	4.
32 44	115 27	05/19/40	15 30 33	C	4.5
32 44	115 27	05/21/40	21 30 47	C	4.
32 44	115 27	05/22/40	10 58 31	C	4.5
32 44	115 27	06/01/40	23 54 14	C	4.
32 44	115 27	06/01/40	23 59 36	C	4.5
32 44	115 27	06/07/40	05 20 58	C	4.
32 44	115 27	07/15/40	02 32 41	C	4.
32 44	115 27	10/17/40	10 18 07	C	4.
32 44	115 27	07/22/41	18 52 05	C	4.5
32 44	115 42	04/21/60	23 39 20	B	4.2
32 45	118 12	06/25/39	01 49	C	4.5
32 48	117 50	01/24/42	21 41 48	B	4.
32 49	116 12	11/22/53	08 11 38	C	4.1
32 49	118 21	12/26/51	00 46 54	B	5.9
32 50	115 40	06/14/53	04 17 28	C	5.5
32 50	115 40	06/14/53	04 29 58	C	4.8
32 50	118 45	09/13/37	22 14	B	4.
32 51	117 29	02/23/43	09 21 12	C	4.
32 52	116 12	07/04/38	21 59	C	4.
32 52	118 15	02/13/52	15 13 37	C	4.7
32 53	115 35	04/13/38	19 29	C	4.5
32 53	115 37	01/16/46	11 06 54	C	4.2
32 54	115 13	09/08/35	14 40	C	4.5
32 54	115 13	09/08/35	17 03	C	5.
32 54	115 13	10/11/35	14 06	C	5.
32 54	115 13	04/07/36	22 14	C	4.
32 54	115 13	04/07/36	22 53	C	4.5
32 54	115 13	04/08/36	18 41	C	4.
32 54	115 13	04/18/36	05 36	C	4.
32 54	115 13	06/06/38	02 42	C	5.
32 55	115 25	09/18/36	14 28	C	4.
32 55	115 25	09/18/36	14 40	C	4.5
32 55	115 25	09/18/36	14 52	C	4.

See page II for explanation of terms.

## EARTHQUAKE EPICENTERS

1934 - 1961

LATITUDE	LONGITUDE	DATE	TIME	QUALITY	MAGNITUDE
DEG	MIN	DEG	MIN	(ACCURACY)	
32 55	115 28	07/23/35	19 11	C	4.
32 56	115 25	09/18/36	15 48	C	4.
32 56	115 25	09/18/36	16 51	C	4.
32 57	116 09	10/25/42	18 59 39	C	4.
32 57	116 14	11/08/58	13 20 42	C	4.1
32 57	116 15	11/14/51	23 55 03	C	4.1
32 58	115 32	02/13/51	17 16 00	C	4.2
32 58	115 32	02/13/51	17 46 34	C	4.1
32 58	116 00	10/21/42	16 22 13	B	6.5
32 58	116 00	10/21/42	16 25 19	C	5.
32 58	116 00	10/21/42	16 26 54	C	5.
32 58	116 00	10/21/42	16 34 39	C	4.5
32 58	116 00	10/21/42	16 38 06	C	4.5
32 58	116 00	10/21/42	19 10 28	C	4.5
32 58	116 00	10/21/42	21 49 28	C	4.5
32 58	116 00	10/21/42	22 50 31	C	4.
32 58	116 00	10/22/42	11 39 51	C	4.
32 58	116 00	10/22/42	12 55 53	C	4.
32 58	116 00	10/22/42	18 13 26	C	5.
32 58	116 00	10/26/42	04 34 04	C	4.
32 58	116 00	10/29/42	15 56 00	C	4.5
32 58	116 00	10/29/42	16 21 57	C	4.5
32 58	116 00	10/29/42	17 35 52	C	4.
32 58	116 00	10/30/42	05 35 45	C	4.5
32 58	116 00	11/02/42	12 59 42	C	4.5
32 58	116 00	11/03/42	05 06 29	C	4.5
32 58	116 00	11/03/42	10 18 34	C	4.
32 58	116 00	11/07/42	04 39 06	C	4.
32 58	116 00	11/12/42	00 07 37	C	4.
32 58	116 00	11/22/42	06 39 51	C	4.
32 58	116 00	01/08/43	00 24 03	C	4.
32 58	116 00	02/24/43	01 58 31	C	4.
32 58	116 00	03/07/43	20 56 31	C	4.
32 58	116 00	03/26/43	06 29 57	C	4.
32 58	116 00	04/07/43	03 46 14	C	4.
32 58	116 00	04/27/43	03 28 33	C	4.
32 58	116 00	04/30/43	15 52 56	C	4.
32 58	116 00	08/17/43	15 50 58	C	4.
32 58	116 00	11/02/43	16 47 59	C	4.5
32 58	116 00	11/02/43	16 57 16	C	4.

See page II for explanation of terms.

## EARTHQUAKE EPICENTERS

1934 - 1961

LATITUDE		LONGITUDE		DATE	TIME			QUALITY	MAGNITUDE
DEG	MIN	DEG	MIN	MO DAY YR	HR	MIN	SEC	(ACCURACY)	
32	58	116	00	11/02/43	17	50	41	C	4.5
32	58	116	00	11/02/43	17	53	05	C	4.
32	58	116	00	11/02/43	18	01	34	C	4.
32	58	116	00	11/16/43	18	09	09	C	4.
32	58	116	00	08/20/44	11	33	10	C	4.0
32	58	116	23	10/31/42	15	07	58	C	4.
32	59	115	59	05/23/42	15	47	29	C	5.

See page II for explanation of terms.

## EARTHQUAKE EPICENTERS

1934 - 1961

LATITUDE DEG	LONGITUDE DEG	DATE MO DAY YR	TIME HR MIN SEC	QUALITY (ACCURACY)	MAGNITUDE
33	109	10/01/38	13 15	D	5.
33	109	10/08/38	08 30	D	5.
33	109	10/30/38	22 10	D	4.5
33	109	11/01/38	08 25	D	5.
33	109	11/02/38	09 00	D	5.
33	109	11/11/38	18 26	D	5.
33	109	11/26/38	23 00	D	4.
33	109	11/27/38	00 13	D	5.5
33	109	02/24/39	12 05	D	4.5
33	109	02/25/39	04 28	D	4.5
33	109	02/26/39	23 27	D	5.5
33	109	06/04/39	01 20	D	4.5
33	109	07/17/39	06 58	D	4.5
33	109	02/19/41	10 12	D	4.5
33	115	10/28/43	05 58 54	D	4.
33	126	05/20/49	22 35 31	D	4.8
33 00	115 30	12/17/55	05 17 21	B	4.3
33 00	115 30	12/17/55	06 07 29	B	5.4
33 00	115 30	12/17/55	06 17 36	B	4.1
33 00	115 30	12/17/55	06 52 03	B	4.6
33 00	115 30	12/17/55	19 05 43	B	4.3
33 00	115 32	10/25/55	17 49 42	C	4.3
33 00	115 50	01/08/46	18 54 18	C	5.4
33 00	116 19	02/26/57	21 16 52	B	4.1
33 00	123 30	05/21/48	15 38 20	D	4.8
33 02	115 53	08/27/45	11 25 20	C	4.0
33 02	116 14	09/16/61	19 49 40	C	4.4
33 02	116 14	09/20/61	05 04 10	C	4.0
33 02	116 38	07/02/57	06 56 41	B	4.1
33 03	116 01	08/26/55	05 23 22	C	4.3
33 03	116 14	08/23/61	01 00 48	B	4.7
33 03	116 16	08/22/61	23 19 34	B	4.4
33 05	115 59	03/02/34	21 30	B	4.5
33 05	115 59	12/15/37	09 58	C	4.
33 05	115 59	12/10/38	03 12	C	4.
33 05	115 59	07/13/40	16 39 23	C	4.
33 05	115 59	07/14/40	00 01 44	C	4.
33 05	115 59	07/21/40	08 36 02	B	4.5
33 06	115 24	12/05/51	15 53 14	D	4.5
33 06	115 54	04/25/57	22 05	C	4.2

See page II for explanation of terms.

## EARTHQUAKE EPICENTERS

1934 - 1961

LATITUDE		LONGITUDE		DATE	TIME			QUALITY (ACCURACY)	MAGNITUDE
DEG	MIN	DEG	MIN	MO DAY YR	HR	MIN	SEC		
33	06	115	54	04/25/57	22	48		C	4.1
33	06	115	54	04/25/57	22	49		C	4.2
33	06	116	27	11/23/53	13	39	07	B	4.3
33	06	116	38	02/08/52	17	40	28	C	4.0
33	07	115	34	07/27/50	09	54		C	4.1
33	07	115	34	07/27/50	11	29		C	4.8
33	07	115	34	07/27/50	12	02		C	4.2
33	07	115	34	07/27/50	22	51		C	4.5
33	07	115	34	07/28/50	03	25		C	4.7
33	07	115	34	07/28/50	16	24		C	4.0
33	07	115	34	07/28/50	17	27		C	4.7
33	07	115	34	07/28/50	17	30		C	4.1
33	07	115	34	07/28/50	17	50		C	5.4
33	07	115	34	07/28/50	17	58		C	4.8
33	07	115	34	07/28/50	18	17		C	4.2
33	07	115	34	07/28/50	18	40		C	4.0
33	07	115	34	07/28/50	19	49		C	4.2
33	07	115	34	07/28/50	21	13		C	4.1
33	07	115	34	07/29/50	00	17		C	4.5
33	07	115	34	07/29/50	14	36		C	5.5
33	07	115	34	07/29/50	15	09		C	4.5
33	07	115	34	07/29/50	17	14		C	4.3
33	07	115	34	07/29/50	18	43		C	4.7
33	07	115	34	08/01/50	08	37		C	4.8
33	07	115	34	08/14/50	19	16		C	4.7
33	07	115	34	01/24/51	07	17	01	B	5.6
33	07	115	34	01/24/51	07	33	07	C	4.0
33	07	116	07	06/18/43	16	15	46	C	4.5
33	07	116	25	06/04/40	10	35	10	B	5.
33	07	116	25	06/04/40	10	36	56	C	4.
33	07	116	25	10/21/40	06	49	33	B	4.5
33	08	115	24	06/15/55	17	35	57	C	4.0
33	08	116	00	04/28/61	06	30	20	B	4.2
33	08	116	05	05/07/36	11	47		C	4.5
33	08	116	05	02/28/40	17	28	07	B	4.5
33	08	116	05	10/06/40	18	19	53	B	4.
33	08	116	05	10/16/40	17	52	13	C	4.
33	08	116	23	01/24/57	20	54	49	B	4.6
33	08	116	29	08/18/59	21	52	22	C	4.3
33	09	116	35	12/02/35	03	19		C	4.

See page II for explanation of terms.

## EARTHQUAKE EPICENTERS

1934 - 1961

LATITUDE	LONGITUDE	DATE	TIME	QUALITY	MAGNITUDE
DEG	MIN	DEG	MIN	(ACCURACY)	
33 28	116 35	05/12/39	19 25	B	4.5
33 28	116 38	02/20/34	10 35	B	4.
33 29	116 30	02/15/51	10 47 59	B	4.8
33 29	116 30	02/15/51	10 49 57	B	4.8
33 29	116 42	12/28/48	12 53 41	B	4.0
33 30	116 29	02/23/41	18 36 14	C	4.5
33 30	116 46	06/12/59	11 03 13	C	4.0
33 30	116 55	11/04/35	03 55	B	4.5
33 30	116 55	07/29/36	14 22	C	4.
33 30	118 15	01/15/37	18 35	B	4.
33 30	120 30	01/14/41	16 53 00	C	4.
33 31	118 06	03/22/41	08 22 40	B	4.
33 32	116 33	09/23/56	11 24 42	B	4.3
33 32	116 38	09/21/42	07 07	C	4.
33 34	117 59	04/17/34	18 33	C	4.
33 34	117 59	07/07/37	11 12	B	4.
33 35	119 11	02/10/52	13 50 55	C	4.0
33 36	118	03/11/33	01 54 08		6.3
33 36	118 01	12/25/35	17 15	B	4.5
33 37	118 02	05/21/38	09 44	B	4.
33 37	118 07	01/20/34	21 17	B	4.5
33 38	118 12	11/01/40	20 00 46	B	4.
33 38	118 24	10/17/34	09 38	B	4.
33 39	116 45	09/05/50	19 19 56	B	4.8
33 39	118 00	10/20/61	19 49 51	B	4.3
33 40	117 59	10/20/61	20 07 14	B	4.0
33 40	117 59	10/20/61	21 42 41	B	4.0
33 40	118 01	10/20/61	22 35 34	B	4.1
33 40	119 30	11/30/39	06 42 51	B	4.
33 41	117 32	05/31/38	08 34	B	5.5
33 41	117 32	07/05/38	18 06	B	4.5
33 41	117 32	08/06/38	22 00	B	4.
33 41	118 00	11/20/61	08 53 35	B	4.0
33 42	115 56	04/02/57	04 22 47	B	4.1
33 42	117 26	02/19/40	12 06 58	B	4.5
33 42	118 04	02/08/40	16 56 17	B	4.
33 42	118 04	07/18/40	04 01 13	B	4.
33 43	117 31	06/19/35	11 17	B	4.
33 43	118 42	10/29/36	22 35	C	4.
33 44	117 28	10/26/54	16 22 26	B	4.1

See page II for explanation of terms.

## EARTHQUAKE EPICENTERS

1934 - 1961

LATITUDE		LONGITUDE		DATE	TIME			QUALITY (ACCURACY)	MAGNITUDE
DEG	MIN	DEG	MIN	MO DAY YR	HR	MIN	SEC		
33	45	116	00	09/02/56	02	46	37	B	4.2
33	45	117		04/21/18	22	32	25		6.8
33	45	117	30	01/03/56	00	25	49	A	4.7
33	45	118	00	11/16/34	21	26		B	4.
33	46	115	59	09/01/56	05	57	53	B	4.0
33	46	117	49	08/22/36	05	21		B	4.
33	46	118	07	11/04/39	21	41	00	B	4.
33	47	116	12	10/31/43	13	12	10	C	4.5
33	47	116	17	03/04/37	16	04		B	4.0
33	47	118	08	12/27/39	19	28	49	B	4.5
33	47	118	08	01/13/40	07	49		B	4.
33	47	118	12	10/22/41	10	32	20	B	4.
33	47	118	15	11/14/41	08	41	36	A	5.5
33	47	118	25	10/11/40	05	57	13	B	5.
33	47	118	25	10/12/40	00	24	00	B	4.
33	47	118	25	10/14/40	20	51	11	B	4.
33	47	118	25	11/01/40	07	25	03	B	4.
33	47	118	25	11/02/40	02	58	26	B	4.
33	48	116	05	05/28/61	12	59	47	A	4.4
33	48	118	06	10/02/33	09	10	18		5.4
33	48	118	14	08/31/38	03	18		B	4.5
33	49	115	28	01/28/55	12	10	20	C	4.3
33	49	118	13	10/22/41	06	57	18	A	5.
33	50	117	24	06/05/40	08	27	27	B	4.
33	51	115	51	10/13/49	04	20	40	B	4.0
33	51	117	21	11/07/39	18	52	09	B	4.5
33	51	117	45	10/04/61	02	21	32	B	4.1
33	51	120	18	08/27/49	15	54	28	C	4.0
33	52	115	42	04/28/46	17	31	23	C	4.4
33	52	118	13	06/19/44	00	03	33	B	4.5
33	52	118	13	06/19/44	03	06	07	C	4.4
33	53	118	28	11/29/38	19	21		B	4.
33	54	118	36	08/31/30	00	40	36		5.3
33	55	115	42	06/04/46	12	05	24	C	4.8
33	55	116	15	08/15/46	19	01	08	C	4.0
33	55	116	20	04/17/59	16	18	57	C	4.2
33	55	116	42	11/17/43	11	28	41	C	4.5
33	55	119	30	08/26/54	13	48	03	B	4.8
33	56	116	21	12/05/48	00	40	32	A	4.4
33	56	116	22	12/05/48	00	07	21	A	4.9

See page II for explanation of terms.

## EARTHQUAKE EPICENTERS

1934 - 1961

LATITUDE DEG	LATITUDE MIN	LONGITUDE DEG	LONGITUDE MIN	DATE MO DAY YR	TIME HR MIN SEC	QUALITY (ACCURACY)	MAGNITUDE
33	56	116	23	12/04/48	23 43 17	A	6.5
33	56	116	24	12/10/48	20 42 57	A	4.4
33	56	116	45	08/06/38	02 28	B	4.
33	56	116	45	10/28/44	18 30 16	B	4.4
33	56	117	22	10/24/43	00 29 21	C	4.
33	57	115	40	08/04/59	18 25 22	C	4.1
33	57	116	44	04/26/42	15 10 23	C	4.
33	57	116	51	09/28/46	07 19	B	5.0
33	57	117	35	04/11/41	01 20 24	B	4.
33	57	118	12	01/11/50	21 41 35	B	4.1
33	58	116	20	01/02/57	07 52 15	B	4.6
33	58	116	26	12/05/48	00 42 35	A	4.6
33	58	116	27	12/11/48	16 12 20	A	4.5
33	58	116	45	06/12/44	10 45 34	A	5.1
33	58	116	45	06/12/44	11 16 35	A	5.3
33	58	116	45	06/12/44	22 21 19	B	4.2
33	58	116	48	06/10/44	11 11 50	A	4.5
33	58	116	48	06/10/44	11 15 31	B	4.0
33	58	116	48	09/07/45	15 34 24	B	4.3
33	58	118	03	01/30/41	01 34 47	A	4.
33	59	116	28	01/08/52	06 34 28	A	4.4
33	59	118	18	02/11/40	19 24 10	B	4.

See page II for explanation of terms.

## EARTHQUAKE EPICENTERS

1934 - 1961

LATITUDE DEG	LATITUDE MIN	LONGITUDE DEG	LONGITUDE MIN	DATE MO DAY YR	TIME HR MIN SEC	QUALITY (ACCURACY)	MAGNITUDE
34		117	15	07/23/23	07 30 26		6.3
34	00	115	45	03/03/42	01 03 24	C	5.
34	00	115	45	03/04/42	11 02 12	C	4.
34	00	116	03	12/27/48	11 19 04	C	4.0
34	00	116	23	05/05/44	13 47 15	C	4.0
34	00	116	28	12/05/48	00 50 57	A	4.4
34	00	116	28	12/06/48	02 46 08	A	4.3
34	00	116	40	09/23/49	21 44 40	B	4.0
34	00	116	42	08/25/44	07 30	C	4.2
34	00	118	25	12/07/38	03 38	B	4.
34	00	120	01	04/01/45	23 43 42	C	5.4
34	01	115	41	05/02/49	11 25 47	C	5.9
34	01	115	41	05/02/49	14 35 21	C	4.2
34	01	115	41	05/02/49	18 41 03	C	4.
34	01	115	41	05/06/49	03 26 06	C	4.1
34	01	115	41	05/10/49	04 06 33	C	4.7
34	01	115	41	05/22/49	23 21 27	C	4.0
34	01	115	41	05/25/49	17 31 46	C	4.5
34	01	115	46	05/02/49	11 24 58	C	4.6
34	01	116	29	01/13/50	05 07 19	B	4.1
34	01	116	30	07/24/47	22 10 46	A	5.5
34	01	116	30	07/24/47	22 53 41	C	4.3
34	01	116	30	07/24/47	22 54 26	C	4.9
34	01	116	30	07/25/47	00 46 31	C	5.0
34	01	116	30	07/25/47	01 56 47	C	4.6
34	01	116	30	07/25/47	05 17 52	C	4.3
34	01	116	30	07/25/47	06 19 49	C	5.2
34	01	116	30	07/25/47	07 57	C	4.2
34	01	116	30	07/25/47	16 14 53	C	4.5
34	01	116	30	07/26/47	01 24 15	C	4.2
34	01	116	30	07/26/47	02 49 41	C	5.1
34	01	116	30	07/26/47	23 04 25	C	4.5
34	01	116	30	07/26/47	23 13 51	C	4.1
34	01	116	30	07/29/47	16 36 15	C	4.2
34	01	116	30	07/30/47	05 22 17	C	4.2
34	01	116	30	08/01/47	17 01 37	C	4.1
34	01	116	30	08/08/47	06 47 45	C	4.0
34	01	117	14	02/17/52	12 36 58	B	4.5
34	01	117	30	03/19/37	01 23	B	4.
34	01	118	58	04/16/48	22 26 24	B	4.7

See page II for explanation of terms.

## EARTHQUAKE EPICENTERS

1934 - 1961

LATITUDE DEG	LATITUDE MIN	LONGITUDE DEG	LONGITUDE MIN	DATE MO DAY YR	TIME HR MIN SEC	QUALITY (ACCURACY)	MAGNITUDI
34	01	119	05	05/29/55	16 43 35	B	4.1
34	02	115	33	10/30/54	02 02 43	C	4.6
34	02	116	46	04/30/54	00 36 23	B	4.2
34	02	116	51	06/27/59	16 22 11	B	4.0
34	02	117	19	09/03/35	06 47	B	4.5
34	03	115	38	09/11/53	20 50 46	B	4.2
34	03	116	17	05/18/40	05 03 59	B	5.5
34	03	116	17	05/18/40	05 51 21	C	5.5
34	03	116	17	05/18/40	06 04 31	C	4.5
34	03	116	17	05/18/40	07 21	C	5.
34	03	116	17	05/18/40	13 47 19	C	4.5
34	03	116	17	05/19/40	02 26 02	C	4.5
34	03	116	17	05/19/40	02 27 30	C	4.5
34	03	116	17	05/19/40	03 51 45	C	4.
34	03	116	17	05/19/40	19 39 41	C	4.
34	03	116	17	05/22/40	06 31 37	C	4.
34	03	116	17	05/22/40	14 10 05	C	4.
34	03	116	17	05/27/40	03 27 27	C	4.
34	03	116	17	06/01/40	05 27 00	C	4.5
34	03	116	17	06/01/40	05 56 46	C	4.
34	03	116	17	06/01/40	06 54 28	C	4.5
34	03	116	17	06/02/40	06 13 09	C	4.5
34	03	116	17	06/06/40	22 21 14	C	4.5
34	03	116	17	06/06/40	23 48 49	C	4.
34	03	116	17	06/06/40	23 56 36	C	4.5
34	03	116	17	06/08/40	17 10 32	C	4.
34	03	116	17	06/11/40	19 51 18	C	4.5
34	03	116	17	06/14/40	21 58 50	C	4.
34	03	116	17	06/24/40	16 39 36	C	4.
34	03	116	17	08/01/40	19 31 40	C	4.
34	03	116	17	08/04/40	18 15 20	B	4.
34	03	116	26	02/08/38	07 39	B	4.
34	03	116	33	08/26/59	05 32 51	B	4.3
34	04	117	23	04/18/40	18 43 44	B	4.5
34	05	116	28	01/26/34	18 44	C	4.
34	05	116	28	03/01/42	10 46 31	C	4.
34	05	117	28	05/15/55	17 03 26	B	4.0
34	06	116	53	10/24/35	14 48	B	5.
34	06	116	53	10/24/35	14 51	C	4.5
34	06	116	53	10/24/35	14 52	C	4.5

See page II for explanation of terms.

## EARTHQUAKE EPICENTERS

1934 - 1961

LATITUDE		LONGITUDE		DATE	TIME			QUALITY (ACCURACY)	MAGNITUDE
DEG	MIN	DEG	MIN	MO DAY YR	HR	MIN	SEC		
34	06	116	53	10/24/35	15	27		C	4.
34	06	117	41	01/09/34	14	10		A	4.5
34	06	117	41	01/18/34	02	14		A	4.
34	06	119	10	03/18/57	18	56	28	C	4.7
34	07	116	45	08/22/42	12	59	13	C	4.
34	07	117	20	09/22/51	08	22	39	A	4.3
34	07	117	25	02/23/36	22	20		B	4.5
34	07	117	25	02/26/36	09	33		B	4.
34	07	117	35	09/01/37	13	48		B	4.5
34	07	117	35	09/01/37	16	35		B	4.5
34	08	116	21	12/04/57	02	51	43	B	4.3
34	08	116	57	06/10/38	14	40		B	4.
34	08	117	26	06/28/60	20	00	48	B	4.1
34	08	117	32	12/27/38	10	09		B	4.
34	09	119	21	08/22/50	22	47	58	B	4.2
34	10	116	15	02/15/38	07	45		C	4.5
34	10	116	59	10/16/51	12	41	05	B	4.0
34	10	117	32	03/01/48	08	12	13	B	4.7
34	10	117	52	07/13/35	10	54		B	4.5
34	11	117	35	10/03/48	02	46	28	A	4.0
34	12	116	54	01/16/30	00	24	34		5.3
34	12	117	05	04/03/39	02	50		C	4.
34	12	122	12	10/09/52	14	46	02	D	4.6
34	13	117	28	03/25/41	23	43	41	B	4.
34	14	116	20	05/11/47	05	06	20	B	4.9
34	15	116	10	03/20/45	21	55	07	C	5.0
34	15	116	45	03/16/56	20	29	34	B	4.8
34	15	116	45	03/16/56	20	36	14	B	4.0
34	15	116	45	03/16/56	23	34	57	B	4.4
34	15	116	45	03/18/56	02	42	18	B	4.0
34	16	116	10	12/12/57	08	00	06	C	4.4
34	16	116	45	03/16/56	20	33	44	B	4.0
34	16	116	45	05/11/56	16	30	50	C	4.7
34	16	116	58	08/29/43	03	45	13	C	5.5
34	16	116	58	08/29/43	03	57	54	C	4.
34	16	116	58	08/29/43	05	16	30	C	4.
34	16	119	31	04/12/44	15	33	10	C	4.0
34	17	116	11	03/29/45	04	04	17	B	4.2
34	18	116	25	08/07/42	01	15	33	C	4.5
34	18	116	25	08/07/42	01	23	58	C	4.

See page II for explanation of terms.

## EARTHQUAKE EPICENTERS

1934 - 1961

LATITUDE		LONGITUDE		DATE	TIME	QUALITY	MAGNITUDE
DEG	MIN	DEG	MIN	MO DAY YR	HR MIN SEC	(ACCURACY)	
34	18	116	25	08/07/42	01 53 14	C	4.0
34	18	116	47	08/28/50	19 45 26	B	4.2
34	18	119	48	06/29/25	14 42 16		6.3
34	19	116	48	08/12/50	02 17 17	B	4.3
34	19	119	42	10/21/53	16 02 38	B	4.0
34	20	115	48	12/22/43	15 50 28	B	5.5
34	20	116	53	10/14/43	14 28 44	C	4.5
34	20	117	00	02/27/42	01 08 53	B	4.0
34	20	119	35	10/02/38	18 45	C	4.0
34	20	119	35	07/01/41	07 50 57	A	6.0
34	20	119	35	07/01/41	08 19	B	4.0
34	20	119	35	07/01/41	08 21	B	4.0
34	20	119	35	07/01/41	08 30	B	4.0
34	20	119	35	07/01/41	08 48	B	4.0
34	20	119	35	07/01/41	08 58	B	4.0
34	20	119	35	07/01/41	09 05	B	4.0
34	20	119	35	07/01/41	09 45	B	4.0
34	20	119	35	07/01/41	10 25	B	4.0
34	20	119	35	07/01/41	18 20	B	4.0
34	20	119	35	07/01/41	23 54	B	4.5
34	20	119	35	07/02/41	22 19	B	4.0
34	20	119	35	07/03/41	19 26	B	4.0
34	20	119	35	07/12/41	16 18	B	4.5
34	20	119	35	09/08/41	03 12 45	B	4.5
34	20	119	35	09/08/41	03 14 23	B	4.
34	20	119	35	09/14/41	01 45 18	B	4.
34	20	119	35	09/15/41	01 37 02	B	4.
34	20	119	35	09/25/41	05 12 56	B	4.
34	20	119	35	11/18/41	18 08 10	C	4.
34	20	119	35	11/21/41	16 56 03	C	4.
34	21	116	17	09/20/42	16 14 14	C	4.0
34	21	116	52	10/15/43	16 50 01	C	4.5
34	21	119	29	07/14/58	05 25 55	B	4.7
34	21	119	46	11/10/40	10 25 10	C	4.
34	22	119	48	08/09/56	00 08 49	B	4.0
34	22	120	23	09/09/36	04 54	C	4.0
34	24	116	25	11/10/47	02 22 55	B	4.5
34	24	116	55	01/25/42	21 51 33	B	4.
34	24	116	55	02/01/42	15 15 55	B	4.
34	24	116	55	02/01/42	15 18 28	B	4.5

See page II for explanation of terms.

## EARTHQUAKE EPICENTERS

1934 - 1961

LATITUDE	LONGITUDE	DATE	TIME	QUALITY	MAGNITUDE
DEG	MIN	DEG	MIN	(ACCURACY)	
34 24	116 55	02/01/42	16 03 34	B	4.5
34 24	117 48	02/24/46	06 07 52	C	4.1
34 25	116 38	07/02/55	16 29 39	B	4.2
34 25	116 51	02/11/32	23 11 20	B	4.0
34 25	118 50	06/01/46	11 06 31	C	4.1
34 26	116 59	04/18/45	04 58 02	B	4.3
34 26	120 34	10/01/59	04 35 35	B	4.5
34 27	116 47	05/22/42	15 18 29	C	4.
34 29	118 59	09/03/42	14 06 01	C	4.5
34 29	118 59	09/04/42	06 34 33	C	4.5
34 30	118 13	08/23/52	10 09 07	B	5.0
34 30	119 07	11/17/54	23 03 51	B	4.4
34 30	119 50	11/16/58	09 34 04	C	4.0
34 30	120 30	08/26/49	16 52 32	D	4.2
34 30	120 30	08/27/49	14 51 46	D	4.9
34 30	120 48	12/24/37	11 57	D	4.
34 30	121 24	04/03/44	02 33 00	D	4.0
34 30	121 30	11/04/27	13 50 43		7.3
34 32	115 59	07/18/46	14 27 58	B	5.6
34 33	120 47	03/19/35	03 59	B	4.
34 33	120 47	11/01/36	15 10	B	4.
34 33	120 47	02/16/37	17 40	C	4.
34 33	120 47	11/22/37	04 12	C	4.5
34 33	120 47	12/03/37	15 28	C	4.
34 33	120 47	09/29/38	12 12	C	4.
34 33	120 47	10/17/39	20 42 43	C	4.
34 33	120 47	06/16/40	09 25 04	C	4.
34 35	118 36	02/07/56	02 17 56	B	4.2
34 35	118 36	02/07/56	03 16 39	B	4.6
34 35	120 20	12/17/34	11 10	B	4.5
34 35	120 20	12/18/34	03 09	C	4.
34 36	118 54	05/18/40	09 15 12	C	4.
34 37	116 00	11/09/42	20 34 25	C	4.5
34 37	119 05	02/26/50	00 06 22	C	4.7
34 40	116 40	10/01/53	19 35 14	B	4.1
34 40	118 50	01/24/50	21 56 59	C	4.0
34 40	120 30	06/13/44	08 27 32	C	4.6
34 40	120 30	06/13/44	08 46 43	C	4.0
34 40	120 30	06/13/44	11 07 24	C	4.4
34 41	119 00	04/06/43	22 36 24	C	4.

See page II for explanation of terms.

## EARTHQUAKE EPICENTERS

1934 - 1961

LATITUDE		LONGITUDE		DATE			TIME			QUALITY (ACCURACY)	MAGNITUDE
DEG	MIN	DEG	MIN	MO	DAY	YR	HR	MIN	SEC		
34	42	120	06	07/28/45			02	33	48	D	4.2
34	42	120	15	11/18/36			18	02		C	4.5
34	43	118	58	06/11/35			18	10		B	4.
34	43	120	25	11/30/44			18	53	15	C	4.1
34	45	116	10	03/22/39			19	16		C	4.
34	45	116	28	06/01/37			15	41		C	4.
34	45	116	28	03/31/38			17	03		C	4.
34	49	119	00	11/29/36			05	54		B	4.
34	49	119	00	02/23/39			08	45		B	4.5
34	49	119	00	02/23/39			09	18		B	4.5
34	49	119	00	03/07/39			19	53		B	4.
34	49	119	00	05/08/39			02	48		B	4.5
34	50	120	35	10/16/36			15	30		C	4.
34	51	116	35	07/30/32			07	14	00	B	4.5
34	52	118	52	07/22/52			07	44	55	A	4.1
34	52	118	56	09/21/41			19	53	08	A	5.
34	52	119	01	07/21/52			21	53	09	A	4.3
34	53	116	37	09/20/49			04	14	13	A	4.1
34	53	119	02	08/20/52			08	47	47	A	4.2
34	54	118	54	10/23/16			02	44			5.5
34	54	118	57	08/01/52			13	04	30	A	5.1
34	54	119	03	07/22/52			14	30	18	A	4.3
34	54	119	16	01/11/58			23	09	15	B	4.0
34	56	116	31	04/10/47			17	12	18	A	4.4
34	56	116	31	04/10/47			22	27	23	A	4.2
34	56	116	31	04/11/47			03	32	10	A	4.3
34	56	116	31	04/11/47			18	43	40	A	4.1
34	56	116	31	04/12/47			18	04	34	A	4.0
34	56	116	31	04/12/47			23	48	52	A	4.2
34	56	116	31	04/21/47			19	15	29	A	4.4
34	56	116	31	05/22/47			04	39		A	4.0
34	56	116	33	05/04/47			02	50	39	A	4.0
34	56	116	53	04/27/32			23	35	18	B	4.0
34	56	118	59	11/15/61			05	38	55	B	5.0
34	56	119	04	02/10/54			23	58	38	A	4.5
34	57	116	32	04/10/47			17	18	22	A	5.0
34	57	116	32	04/11/47			02	07	11	A	4.1
34	57	116	57	12/18/48			23	45	17	B	4.4
34	57	118	52	07/21/52			12	19	36	A	5.3
34	57	118	57	10/16/52			12	22	07	A	4.3

See page II for explanation of terms.

## EARTHQUAKE EPICENTERS

1934 - 1961

LATITUDE	LONGITUDE	DATE	TIME	QUALITY	MAGNITUDE
DEG	MIN	DEG	MIN	(ACCURACY)	
34 57	118 58	01/15/55	01 03 07	A	4.3
34 57	119 01	11/11/52	18 12 25	A	4.1
34 58	116 33	04/10/47	16 03	A	5.1
34 58	116 33	04/10/47	17 13	B	4.3
34 58	116 33	04/10/47	18 27 59	A	4.3
34 58	116 33	04/11/47	07 47	A	5.0
34 58	116 33	04/19/47	02 29 09	A	4.7
34 58	116 33	01/03/49	13 43 40	B	4.8
34 58	116 49	08/30/50	16 59 04	C	4.2
34 58	116 56	12/30/47	19 19 14	B	4.0
34 58	116 58	11/07/58	17 38 04	B	4.1
34 58	118 57	07/30/52	11 02 55	A	4.1
34 58	118 57	11/27/52	15 36 41	A	4.0
34 58	119 00	09/02/52	20 45 56	A	4.7
34 59	116 33	04/10/47	15 58 06	A	6.2
34 59	116 33	11/17/47	14 07 10	A	4.3
34 59	118 54	07/24/52	09 50 32	A	4.3
34 59	118 54	03/23/53	17 06 37	A	4.0
34 59	118 59	05/23/54	23 52 43	A	5.1
34 59	119 02	07/21/52	23 53 28	A	4.5

See page II for explanation of terms.

## EARTHQUAKE EPICENTERS

1934 - 1961

LATITUDE DEG	LONGITUDE DEG	DATE MO DAY YR	TIME HR MIN SEC	QUALITY (ACCURACY)	MAGNITUDE
35 00	116 13	08/18/38	07 39	C	4.5
35 00	117 00	08/01/47	15 42 30	B	4.0
35 00	117 00	08/13/47	20 08 59	B	4.3
35 00	118 44	08/23/52	06 03 03	A	4.3
35 00	118 44	04/29/53	12 47 45	A	4.7
35 00	118 50	07/23/52	07 53 19	A	5.4
35 00	118 50	07/23/52	18 13 51	A	5.2
35 00	118 50	12/01/52	05 26 10	A	4.4
35 00	119 00	07/21/52	12 05 31	D	6.4
35 00	119 00	07/21/52	12 06	D	4.8
35 00	119 00	07/21/52	12 07	D	4.7
35 00	119 00	07/21/52	12 10	D	4.5
35 00	119 00	07/21/52	12 12	D	4.6
35 00	119 00	07/21/52	12 18	D	4.4
35 00	119 00	07/21/52	12 22	D	4.9
35 00	119 00	07/21/52	12 25	D	4.7
35 00	119 00	07/21/52	12 28	D	4.2
35 00	119 00	07/21/52	12 39	D	4.2
35 00	119 00	07/21/52	12 40	D	4.9
35 00	119 00	07/21/52	12 59	D	4.2
35 00	119 00	07/21/52	13 08	D	4.5
35 00	119 00	07/21/52	13 11	D	4.1
35 00	119 00	07/21/52	13 13	D	4.5
35 00	119 00	07/21/52	13 17	D	4.0
35 00	119 00	07/21/52	13 25 12	A	4.5
35 00	119 00	07/21/52	13 36	D	4.1
35 00	119 00	07/21/52	13 59	D	4.6
35 00	119 00	07/21/52	14 06	D	4.2
35 00	119 00	07/21/52	14 15	D	4.4
35 00	119 00	07/21/52	14 17	D	4.1
35 00	119 00	07/21/52	14 42	D	4.2
35 00	119 00	07/21/52	14 51	D	4.2
35 00	119 00	07/21/52	15 36	D	4.2
35 00	119 00	07/21/52	15 42	D	4.2
35 00	119 00	07/21/52	15 53	D	4.5
35 00	119 00	07/21/52	16 17	D	4.1
35 00	119 00	07/21/52	16 38	D	4.5
35 00	119 00	07/21/52	18 00	D	4.5
35 00	119 00	07/22/52	08 21 22	A	4.1
35 00	119 00	07/22/52	13 31 43	A	4.8

See page II for explanation of terms.

## EARTHQUAKE EPICENTERS

1934 - 1961

LATITUDE		LONGITUDE		DATE	TIME			QUALITY (ACCURACY)	MAGNITUDE
DEG	MIN	DEG	MIN	MO DAY YR	HR	MIN	SEC		
35	00	119	00	07/22/52	17	52	36	A	4.1
35	00	119	00	07/22/52	19	10	24	D	4.1
35	00	119	00	07/23/52	00	43	08	A	4.4
35	00	119	00	07/25/52	00	03		D	4.0
35	00	119	00	08/10/52	19	44	24	A	4.1
35	00	119	01	07/21/52	11	52	14	A	7.7
35	00	119	01	05/25/53	03	24	01	A	4.8
35	00	119	01	01/12/54	23	33	49	A	5.9
35	00	119	02	07/21/52	11	54		D	4.5
35	00	119	02	07/21/52	11	55		D	4.5
35	00	119	02	07/21/52	11	57		D	4.5
35	00	119	02	07/21/52	11	58		D	4.6
35	00	119	02	07/21/52	11	59		D	4.5
35	00	119	02	07/21/52	12	02		D	5.6
35	00	119	03	09/12/52	10	35	25	A	4.5
35	00	119	05	11/07/52	08	55	35	A	4.6
35	00	121	00	03/27/47	09	16	46	D	4.2
35	01	118	59	08/17/52	09	09	07	A	4.1
35	01	119	03	08/05/53	12	20	59	A	4.3
35	02	116	52	11/10/48	23	56	13	B	4.1
35	02	118	51	10/07/53	14	59	21	A	4.9
35	02	118	55	07/23/52	21	16	58	A	4.1
35	02	118	56	07/22/52	22	31	33	A	4.7
35	02	119	00	07/22/52	10	19	39	A	4.1
35	02	119	03	07/27/52	07	16	11	A	4.1
35	02	119	03	08/07/52	16	31	51	A	4.9
35	02	119	03	08/18/52	04	40	10	A	4.7
35	02	119	06	09/02/53	15	27	56	A	4.0
35	02	119	06	01/12/54	23	40	37	B	4.1
35	02	119	06	01/13/54	01	45	31	A	4.4
35	02	119	06	02/07/54	00	09	53	B	4.4
35	03	118	54	09/25/52	16	21	36	A	4.1
35	03	118	57	08/17/52	06	14	04	A	4.0
35	03	119	08	05/23/53	07	52	55	A	4.2
35	03	119	08	08/06/53	11	20	04	A	4.4
35	03	119	10	12/14/50	13	56	23	B	4.4
35	03	119	14	08/19/52	19	12	26	A	4.5
35	04	118	37	07/23/52	23	51	36	A	4.0
35	04	118	46	07/22/52	21	02	11	A	4.2
35	04	118	53	08/14/52	11	41	46	A	4.2

See page II for explanation of terms.

## EARTHQUAKE EPICENTERS

1934 - 1961

LATITUDE		LONGITUDE		DATE			TIME			QUALITY (ACCURACY)	MAGNITUDE
DEG	MIN	DEG	MIN	MO	DAY	YR	HR	MIN	SEC		
35	19	118	30	07	24	52	14	05	26	A	4.3
35	19	118	30	07	24	52	14	10	13	A	4.0
35	19	118	30	07	25	52	13	13	09	A	5.0
35	19	118	30	07	25	52	19	09	45	A	5.7
35	19	118	30	07	25	52	19	43	23	A	5.7
35	19	118	30	07	25	52	20	06	06	A	4.8
35	19	118	30	07	26	52	01	02	21	A	4.2
35	19	118	30	07	26	52	22	58	56	A	4.3
35	19	118	30	07	27	52	00	09	16	A	4.2
35	19	118	30	07	31	52	19	05	15	A	4.0
35	19	118	30	08	01	52	21	35	22	A	4.0
35	19	118	30	08	06	52	03	46	23	A	4.3
35	19	118	30	08	10	52	12	23	17	A	4.6
35	19	118	30	08	11	52	13	21	49	A	4.4
35	19	118	30	08	13	52	04	29	39	A	4.6
35	19	118	30	08	30	52	04	56	00	A	4.7
35	19	118	30	08	30	52	04	59	55	A	4.0
35	19	118	30	09	04	52	18	06	50	A	4.4
35	19	118	30	09	15	52	04	40	13	A	4.9
35	19	118	30	10	20	52	18	14	43	A	4.3
35	19	118	30	01	20	53	08	13	22	A	4.0
35	19	118	57	09	01	52	10	39	00	A	4.1
35	20	118	28	08	09	52	10	07	32	A	4.2
35	20	118	28	12	25	52	05	56	33	A	4.1
35	20	118	32	08	01	52	10	35	56	A	4.0
35	20	118	34	08	08	52	05	17	18	A	4.0
35	20	118	36	07	23	52	16	18	38	A	4.5
35	20	118	36	07	23	52	16	48	53	A	4.5
35	20	118	36	07	31	52	12	09	09	A	5.8
35	20	118	36	08	10	52	06	01	18	A	4.0
35	20	118	36	09	16	52	14	24	54	A	4.0
35	20	118	44	08	05	52	06	50	10	A	4.4
35	20	118	55	07	29	52	19	51	32	A	4.5
35	20	118	55	07	31	52	19	53	14	A	4.5
35	20	118	55	08	07	52	19	19	07	A	4.2
35	20	118	55	08	22	52	22	41	24	A	5.8
35	20	119	15	01	20	41	13	58	16	C	4.
35	20	124	40	11	08	40	22	20	45	C	5.
35	21	117	52	07	03	44	05	38	23	B	4.7
35	21	118	58	02	04	54	20	48	41	B	4.0

See page II for explanation of terms.

## EARTHQUAKE EPICENTERS

1934 - 1961

LATITUDE		LONGITUDE		DATE	TIME			QUALITY (ACCURACY)	MAGNITUDE
DEG	MIN	DEG	MIN	MO DAY YR	HR	MIN	SEC		
35	22	118	30	06/20/53	23	18	52	A	4.4
35	22	118	30	07/19/55	02	04	26	B	4.1
35	22	118	32	07/23/52	19	51	34	A	4.2
35	22	118	35	07/23/52	00	38	32	A	6.1
35	22	118	35	07/23/52	00	47	38	A	4.6
35	22	118	35	07/23/52	03	19	23	A	5.0
35	22	118	35	07/23/52	04	01	40	A	4.7
35	22	118	35	07/23/52	06	26	28	A	4.0
35	22	118	35	07/23/52	06	53	42	A	4.2
35	22	118	35	07/27/52	07	35	39	A	4.2
35	22	118	35	07/28/52	15	41	20	A	4.0
35	22	118	35	09/16/52	15	21	08	A	4.3
35	22	118	39	08/24/55	17	05	41	A	4.0
35	22	118	50	03/17/35	20	26		B	4.
35	22	118	53	09/12/53	06	41	16	A	4.1
35	23	118	27	08/03/52	01	51	56	A	4.1
35	23	118	34	07/23/52	05	46	03	A	4.7
35	23	118	36	09/05/53	19	24	36	A	4.1
35	23	118	51	07/29/52	07	03	47	A	6.1
35	23	118	51	10/13/52	22	20	35	A	4.0
35	24	117	46	11/18/61	03	18	36	B	4.3
35	24	118	31	02/11/55	19	44	30	A	4.5
35	24	118	35	07/24/52	11	47	56	A	4.4
35	24	118	35	07/25/52	07	03	51	A	4.1
35	24	118	38	10/02/52	23	10	21	A	4.2
35	24	118	38	08/08/55	03	21	51	A	4.7
35	24	118	44	11/21/55	20	55	27	A	4.3
35	24	118	49	07/29/52	08	01	46	A	5.1
35	24	121	12	01/02/60	22	51	48	D	4.0
35	25	119	18	06/04/41	08	47	19	C	4.
35	26	118	42	05/01/54	22	04	39	A	4.2
35	27	119	15	01/23/35	13	52		C	4.
35	28	118	27	11/23/53	20	39	01	A	4.4
35	28	120	45	02/03/53	14	50	18	C	4.1
35	30	118	30	07/27/52	02	49	12	A	4.0
35	30	118	58	09/29/48	04	06	48	C	4.2
35	30	120	55	11/27/46	14	44	51	C	4.3
35	34	118	05	07/26/48	17	50	00	C	4.5
35	34	118	14	05/28/55	19	44	20	A	4.5
35	35	117	05	07/26/38	06	34		C	4.

See page II for explanation of terms.

## EARTHQUAKE EPICENTERS

1934 - 1961

LATITUDE		LONGITUDE		DATE	TIME	QUALITY	MAGNITUDE
DEG	MIN	DEG	MIN	MO DAY YR	HR MIN SEC	(ACCURACY)	
35	36	116	58	03/23/32	00 20 14	B	4.0
35	36	117	39	09/17/38	14 23	B	5.
35	36	120	48	06/29/42	21 07 30	D	4.
35	38	121	09	05/17/49	23 57 55	D	4.1
35	39	117	54	08/31/46	09 10 13	B	4.2
35	39	118	21	06/05/46	21 59 32	B	4.3
35	40	118	05	03/17/46	06 03 47	B	4.4
35	40	121	10	11/23/52	18 40 19	C	4.2
35	40	121	15	07/11/45	16 13 00	D	4.0
35	40	121	24	12/31/48	14 35 46	B	4.6
35	41	117	57	05/26/48	19 35 12	B	4.1
35	41	118	04	02/06/47	17 20 40	B	4.6
35	41	118	05	03/25/46	23 36 45	B	4.3
35	42	118	00	04/12/46	10 34 33	C	4.0
35	42	118	00	04/24/46	07 46	C	4.0
35	42	118	00	04/27/46	22 37 24	C	4.1
35	42	118	00	05/05/46	09 03 43	C	4.2
35	42	118	22	06/11/35	16 20	B	4.
35	42	118	22	05/03/36	14 20	C	4.
35	42	118	22	01/19/37	23 57	B	4.
35	42	121	07	07/28/35	06 00	B	4.
35	43	117	30	03/08/57	13 24 57	B	4.0
35	43	117	59	03/15/46	19 18 54	B	5.4
35	43	118	02	03/18/46	10 05 55	B	4.9
35	43	118	04	03/15/46	14 00 35	B	5.3
35	44	117	59	03/24/46	05 17 28	B	4.1
35	44	118	00	10/24/59	15 35 15	B	4.2
35	44	118	02	03/16/46	13 07 05	C	4.1
35	44	118	02	03/16/46	19 53 59	C	4.0
35	44	118	02	03/17/46	08 16 36	C	4.6
35	44	118	02	03/17/46	21 18 35	C	4.0
35	44	118	02	03/18/46	01 15 09	C	4.1
35	44	118	02	03/18/46	03 00 22	C	4.1
35	44	118	02	03/18/46	15 50 43	C	5.3
35	44	118	02	03/18/46	16 03 46	C	4.1
35	44	118	02	03/22/46	10 08 33	C	4.1
35	44	118	02	03/24/46	02 56 46	C	4.4
35	44	118	02	03/26/46	06 07 13	C	4.1
35	44	118	02	07/22/46	15 19 33	B	4.1
35	44	118	03	03/15/46	13 49 26	B	6.3

See page II for explanation of terms.

## EARTHQUAKE EPICENTERS

1934 - 1961

LATITUDE		LONGITUDE		DATE	TIME			QUALITY (ACCURACY)	MAGNITUDE
DEG	MIN	DEG	MIN	MO DAY YR	HR	MIN	SEC		
35	44	118	06	03/24/46	20	00	03	B	4.5
35	44	118	14	07/10/43	03	12	33	C	4.
35	44	121	12	11/22/52	07	46	37	B	6.0
35	44	121	12	11/22/52	13	37	31	B	4.0
35	45	117	59	03/15/46	13	21	01	B	5.2
35	45	118	01	03/16/46	09	46	18	B	5.1
35	45	118	02	03/15/46	21	54	33	B	5.2
35	45	119	37	04/15/50	11	56	32	C	4.6
35	45	120	15	03/10/22	11	21	20		6.5
35	46	117	56	07/11/56	19	22	06	B	4.2
35	46	118	03	01/28/61	08	12	46	A	5.3
35	46	120	15	10/31/42	10	51	13	C	4.
35	47	117	55	03/18/46	15	49	26	B	4.8
35	47	117	57	06/25/51	19	45	41	B	4.6
35	47	117	57	06/26/51	01	26	39	B	4.4
35	47	118	03	03/15/46	15	00	09	B	4.4
35	47	118	12	04/16/46	10	37	05	B	4.1
35	48	118	32	07/26/32	06	51	58	B	4.5
35	48	120	20	06/05/34	21	48		B	5.
35	48	120	20	06/05/34	22	52		C	4.
35	48	120	20	06/08/34	04	30		B	5.
35	48	120	20	06/08/34	04	47		B	6.
35	48	120	20	06/08/34	05	42		B	4.5
35	48	120	20	06/08/34	09	30		B	4.
35	48	120	20	06/08/34	23	23		B	4.
35	48	120	20	06/10/34	08	03		B	4.5
35	48	120	20	06/14/34	14	55		C	4.
35	48	120	20	06/14/34	15	54		C	4.
35	48	120	20	06/14/34	19	26		C	4.5
35	48	120	20	12/28/39	12	15	38	B	5.
35	48	121	06	06/27/49	10	35	31	D	4.5
35	48	121	12	05/15/53	03	43	18	D	4.0
35	48	121	30	12/20/48	04	42	46	C	4.5
35	49	114	38	08/11/42	10	14	02	C	4.
35	49	117	41	03/09/47	21	10	44	C	4.0
35	49	120	22	07/31/61	00	07	08	C	4.7
35	50	116	38	04/09/54	17	07	38	C	4.2
35	50	117	00	12/30/39	05	00	47	B	4.
35	50	117	46	10/19/61	05	09	44	A	5.2
35	50	118	00	02/08/35	04	22		B	4.

See page II for explanation of terms.

## EARTHQUAKE EPICENTERS

1934 - 1961

LATITUDE DEG	LATITUDE MIN	LONGITUDE DEG	LONGITUDE MIN	DATE MO DAY YR	TIME HR MIN SEC	QUALITY (ACCURACY)	MAGNITUDE
35	50	120	45	09/07/45	11 24 20	C	4.2
35	50	121	10	11/25/52	21 59 17	C	4.3
35	52	122	07	01/29/57	21 19 53	C	4.9
35	53	116	58	11/24/53	05 46 06	B	4.9
35	53	116	58	04/17/54	10 11 40	B	4.2
35	53	120	28	12/11/56	10 56 53	C	4.1
35	53	120	30	05/28/53	03 51 13	B	4.3
35	55	119	55	07/14/47	05 40 06	C	4.0
35	56	116	52	12/19/39	20 12 09	C	4.
35	56	117	46	08/09/44	14 01 05	C	4.0
35	56	117	46	08/12/44	08 25 20	C	4.1
35	56	120	23	06/22/53	15 22 35	C	4.3
35	56	120	29	12/24/34	16 26	B	5.
35	56	120	29	01/06/35	04 04	C	4.
35	56	120	29	01/06/35	04 40	C	4.
35	56	120	29	10/22/35	18 37	C	4.
35	56	120	29	02/20/37	09 58	C	4.
35	56	120	29	11/20/38	15 30	B	4.5
35	56	120	29	05/02/39	18 49	C	4.
35	56	120	29	12/22/41	00 54 09	C	4.
35	56	120	30	10/10/58	13 05 16	B	4.5
35	57	120	28	11/16/56	03 23 09	B	5.0
35	57	121	30	12/03/34	01 54	C	4.5
35	58	117	55	09/10/37	19 34	B	4.
35	58	120	35	12/02/34	16 07	C	4.

See page II for explanation of terms.

## EARTHQUAKE EPICENTERS

1934 - 1961

LATITUDE DEG	LONGITUDE DEG	DATE MO DAY YR	TIME HR MIN SEC	QUALITY (ACCURACY)	MAGNITUDE
36	115	09/07/36	11 48	D	4.5
36	121	02/26/32	16 58		5.0
36	121	06/30/35	23 28	D	4.
36	121	10/25/35	20 56	D	4.
36	121	12/05/37	01 37	D	4.
36	122	06/27/32	05 17 25	D	4.0
36 00	114 48	05/04/39	20 44	C	5.
36 00	114 48	05/04/39	21 53	C	4.
36 00	114 48	05/04/39	22 36	C	4.
36 00	115 00	09/07/36	11 19	C	4.
36 00	115 00	09/20/36	08 18	C	4.
36 00	117 35	08/15/39	15 48 18	B	4.
36 00	117 44	01/07/39	20 21	B	5.
36 00	118 02	09/18/37	08 37	B	4.
36 00	120 20	03/09/54	19 55 29	C	4.0
36 00	120 55	11/02/55	19 40 06	A	5.2
36 00	120 56	03/02/55	15 59 01	B	4.8
36 01	117 56	09/16/43	00 16 11	C	4.
36 01	117 56	09/16/43	07 52	C	4.5
36 03	117 52	07/26/45	10 10 56	C	4.1
36 05	118 48	02/11/48	03 29 28	B	4.6
36 06	114 42	05/24/52	04 15 15	D	4.9
36 07	118 03	01/16/59	00 10 06	A	4.3
36 08	117 58	05/30/43	07 50	C	4.
36 09	117 57	04/24/36	19 00	B	4.
36 09	118 03	01/05/59	12 36 03	A	4.7
36 09	118 03	01/19/59	21 46 00	A	4.1
36 10	120 55	05/23/36	04 41	C	4.
36 10	120 55	02/10/46	11 01 18	C	4.8
36 10	121 32	02/22/37	18 10	C	4.
36 12	118 23	05/18/45	09 44 40	C	4.0
36 12	120 30	02/25/47	11 45 18	D	4.2
36 12	121 18	05/10/38	10 32	D	4.5
36 12	121 18	05/10/38	10 41	D	4.
36 12	121 18	05/13/38	19 34	D	4.
36 13	120 20	10/22/55	07 04 13	C	4.2
36 14	120 19	08/13/40	22 07 29	B	4.
36 14	120 39	02/05/47	06 14 00	B	5.0
36 15	117 58	06/22/42	22 13 51	B	4.
36 15	117 58	06/22/42	23 51 03	B	4.

See page II for explanation of terms.

## EARTHQUAKE EPICENTERS

1934 - 1961

LATITUDE DEG	LONGITUDE DEG	DATE MO DAY YR	TIME HR MIN SEC	QUALITY (ACCURACY)	MAGNITUDE
36 15	117 58	10/16/42	10 07 27	C	4.0
36 18	120 30	11/30/43	21 57 18	D	4.0
36 18	120 54	09/27/38	12 23	C	5.0
36 18	121 18	10/03/51	14 45 14	A	4.2
36 18	121 18	07/23/56	08 03 48	D	4.7
36 19	121 20	10/18/56	12 32 05	C	4.0
36 21	121 07	09/21/58	07 24 55	C	4.6
36 22	118 01	12/01/39	13 05 04	B	4.0
36 24	117 55	12/23/44	08 16 22	A	4.7
36 24	121 00	06/24/39	13 01	C	5.5
36 24	121 00	07/04/39	10 49	C	4.0
36 24	121 00	09/20/39	02 45 29	C	4.0
36 24	121 12	09/16/38	06 11	D	4.0
36 26	121 29	01/11/48	05 37 28	B	4.3
36 27	121 07	10/11/59	02 03 09	C	4.1
36 28	118 00	11/17/54	07 23 57	C	4.1
36 30	115 00	11/21/39	23 40	D	4.0
36 30	120 55	03/17/36	01 55	C	4.0
36 30	121 00	06/16/34	23 03	D	4.0
36 30	121 10	05/27/36	19 55	C	4.5
36 30	121 30	09/18/37	13 29	D	4.0
36 30	121 30	09/07/40	13 02 06	D	4.5
36 30	121 35	02/17/37	03 33	C	4.5
36 31	121 10	03/27/54	15 43 31	C	4.4
36 32	121 08	11/03/60	06 50 24	B	4.1
36 33	116 10	08/30/48	19 02 21	C	4.0
36 34	121 25	06/22/54	11 49 29	A	4.4
36 34	121 25	06/22/54	12 50 04	C	4.3
36 35	121 10	10/22/49	21 45 20	C	4.7
36 35	121 11	07/29/51	10 53 45	B	5.0
36 35	121 17	06/07/44	12 35 38	B	4.0
36 36	116 18	03/27/61	09 00 40		4.4
36 36	121 12	06/11/48	08 28 11	D	4.0
36 36	121 14	09/28/57	21 04 39	B	4.5
36 36	121 18	04/08/42	14 20 14	A	4.0
36 36	121 22	04/28/61	01 02 52	C	4.6
36 37	121 13	08/06/51	09 05 02	B	4.9
36 38	121 15	11/03/45	15 50 22	C	4.2
36 39	121 13	01/14/42	09 44 40	B	4.2
36 39	121 14	10/19/56	12 32 03	C	4.1

See page II for explanation of terms.

## EARTHQUAKE EPICENTERS

1934 - 1961

LATITUDE DEG	LATITUDE MIN	LONGITUDE DEG	LONGITUDE MIN	DATE MO DAY YR	TIME HR MIN SEC	QUALITY (ACCURACY)	MAGNITUDE
36	40	117	51	02/09/52	08 43 30	C	4.1
36	40	118	06	07/11/36	03 47	C	4.
36	40	121	13	04/16/32	18 48 10	C	4.5
36	40	121	19	02/18/56	23 58 30	B	4.2
36	40	121	20	01/08/32	18 16 59	D	4.0
36	41	121	18	04/09/61	07 23 16	A	5.6
36	42	121	18	09/11/59	18 05 03	D	4.0
36	42	121	18	04/09/61	07 25 41	D	5.5
36	42	121	42	03/05/37	12 47	D	4.5
36	43	121	37	05/26/59	15 58 01	C	4.6
36	44	121	12	01/07/45	22 25 33	B	4.7
36	45	121	19	04/11/42	08 40 59	B	4.0
36	45	122		10/22/26	12 35 11		6.1
36	46	121	16	04/27/48	16 41 08	A	4.0
36	46	121	16	04/27/48	20 22 25	A	4.4
36	46	121	25	05/29/46	17 51 03	C	4.5
36	46	121	25	07/07/47	04 40 00	A	4.3
36	47	120	45	04/22/32	00 08 16	C	4.0
36	47	121	26	01/20/60	03 25 53	B	5.0
36	47	122	07	11/15/47	22 30 00	B	4.1
36	48	114	06	12/28/38	04 37	D	4.
36	48	116	12	01/28/59	18 09 04	C	4.0
36	48	117	06	03/25/40	21 18 18	D	4.
36	48	121	00	11/27/58	06 04 30	D	4.3
36	48	121	48	04/14/41	16 16 54	D	4.
36	49	121	22	05/17/45	15 06 47	B	4.6
36	49	121	28	05/25/53	00 23 30	B	4.0
36	49	121	31	11/23/50	13 58 24	C	4.1
36	51	121	34	03/28/48	22 38 03	A	4.6
36	51	121	47	08/05/46	04 08 44	C	4.1
36	52	121	36	12/01/56	14 11 25	B	4.4
36	52	121	40	01/04/61	00 30 17	B	4.1
36	52	121	53	11/07/58	21 33 24	B	4.3
36	53	121	25	08/10/47	21 58 00	A	4.4
36	54	121	23	09/30/50	21 26 33	B	4.1
36	54	121	25	10/30/51	19 55 14	A	4.0
36	54	121	25	10/30/51	19 59 18	B	4.2
36	54	121	25	10/31/51	20 58 19	A	4.8
36	54	121	29	12/29/59	02 32 53	B	4.7
36	54	121	37	01/01/49	01 17 54	B	4.5

See page II for explanation of terms.

## EARTHQUAKE EPICENTERS

1934 - 1961

LATITUDE		LONGITUDE		DATE	TIME	QUALITY (ACCURACY)	MAGNITUDE
DEG	MIN	DEG	MIN	MO DAY YR	HR MIN SEC		
36	54	121	41	04/22/54	18 50 13	B	4•3
36	55	121	40	12/17/53	05 13 12	A	4•2
36	56	121	41	04/25/54	20 33 28	B	5•3
36	57	121	40	03/16/53	08 52 06	B	4•0
36	58	118	14	02/13/55	00 23 03	B	4•1
36	59	121	36	03/02/59	23 27 17	B	5•3
36	59	121	36	03/03/59	18 32 13	B	4•0
36	59	121	40	06/05/42	12 33 25	B	

See page II for explanation of terms.

## EARTHQUAKE EPICENTERS

1934 - 1961

LATITUDE	LONGITUDE	DATE	TIME	QUALITY	MAGNITUDE
DEG	MIN	DEG	MIN	(ACCURACY)	
37		115	03/10/40	18 01 54	D 5.
37		115	03/11/40	00 06	D 4.5
37		115	04/07/40	08 42 0	D 4.5
37		117	09/21/39	09 17	D 4.
37		120	10/14/38	15 31	D 4.
37		121	12/01/38	16 17	D 4.5
37		121	09/18/41	07 33	D 4.
37		122	04/23/34	16 08	D 4.
37		122	06/18/35	04 15	D 4.
37		122	09/24/36	14 12	D 4.
37		122	10/27/37	15 53	D 4.5
37		122	11/12/37	02 50	D 4.
37		122	02/12/38	20 00	D 4.5
37		122	07/17/39	09 24	D 4.5
37		122	03/02/40	13 27	D 4.
37		122	05/28/41	06 23 18	D 4.5
37	00	114 30	01/10/55	10 07 28	D 4.4
37	00	121 18	02/04/42	09 08 24	D 4.
37	00	121 36	03/03/59	07 23 46	B 4.4
37	00	121 46	06/22/47	23 30 00	A 4.7
37	00	122 00	11/22/56	16 43 50	C 4.2
37	01	117 15	06/13/39	17 15	B 5.
37	01	121 29	03/09/49	12 28 39	B 5.2
37	01	121 29	03/14/49	06 10 15	B 4.4
37	04	120 35	11/01/54	06 42 40	C 4.0
37	05	117 05	06/16/51	05 52 56	C 4.5
37	05	117 30	06/14/45	03 30 13	C 5.0
37	05	117 45	02/11/49	21 05 24	C 5.6
37	05	118 00	05/01/46	17 30 10	C 4.0
37	06	113 54	11/20/55	10 57 54	D 4.3
37	06	115 48	06/06/41	19 38 48	D 4.
37	06	118 16	12/17/43	00 19 25	C 4.
37	06	118 16	12/17/43	04 38 00	C 4.
37	08	121 34	01/29/59	16 41 23	A 4.3
37	09	118 20	01/21/55	12 20 59	B 4.0
37	10	118 04	07/30/45	06 06 10	C 4.1
37	10	121 31	11/08/45	20 09 17	C 4.2
37	11	121 48	04/10/54	22 16 53	A 4.1
37	12	118 42	06/07/48	15 05 22	C 4.2
37	13	117 54	02/06/48	13 14 13	C 4.2

See page II for explanation of terms.

## EARTHQUAKE EPICENTERS

1934 - 1961

LATITUDE		LONGITUDE		DATE	TIME	QUALITY	MAGNITUDE
DEG	MIN	DEG	MIN	MO DAY YR	HR MIN SEC	(ACCURACY)	
37	15	118	30	06/19/35	09 55	C	4.5
37	15	118	30	06/19/35	10 07	C	4.
37	15	118	40	10/06/36	12 33	C	4.
37	15	118	40	10/07/36	03 01	C	4.
37	15	121	40	07/09/58	05 23 40	B	4.1
37	15	121	45	07/01/11	22 00 00		6.6
37	15	122	05	06/14/32	09 44 17	D	4.5
37	16	121	43	03/24/59	02 21 13	C	4.1
37	16	121	48	08/27/45	09 13 04	C	4.5
37	18	114	18	05/06/41	03 11 42	D	4.
37	18	117	18	12/07/46	02 02 29	D	4.1
37	18	121	40	06/10/49	03 06 40	B	4.6
37	19	118	23	11/17/44	00 32 49	C	4.2
37	19	118	39	01/13/46	16 31 15	C	4.7
37	20	117	30	05/22/32	08 16 56	C	4.0
37	20	118	07	09/04/45	11 13 56	C	4.2
37	20	118	38	06/06/59	16 30 46	C	4.0
37	20	118	49	08/24/32	09 08 38	C	4.0
37	20	119	50	03/06/35	04 51	C	4.
37	20	121	41	06/22/49	18 08 46	B	4.1
37	21	114	15	11/06/43	03 55	D	4.
37	21	118	33	08/04/59	07 36 59	C	5.2
37	21	118	39	08/04/59	07 41 33	B	4.2
37	21	122	13	10/31/57	19 47 06	A	4.1
37	22	118	50	05/18/46	03 55 00	C	4.1
37	22	118	50	05/18/46	06 45 48	C	4.0
37	22	121	47	09/05/55	02 01 18	B	5.5
37	23	118	36	05/31/43	20 16 53	C	4.5
37	23	118	55	05/16/35	03 25	B	4.5
37	24	114	06	03/06/43	20 14 30	D	4.
37	25	118	35	08/17/45	20 21 14	C	4.2
37	25	118	40	02/02/61	00 07 42	C	5.1
37	25	121	20	07/29/54	08 51 36	B	4.2
37	26	121	41	10/26/43	04 50 33	B	4.9
37	27	118	35	08/06/48	04 22 57	C	4.3
37	27	118	38	02/02/61	00 04 16	B	5.3
37	27	119	00	04/03/39	07 10	C	4.
37	27	119	00	07/08/40	10 57 40	C	5.
37	28	118	22	12/09/49	08 41 18	C	4.1
37	28	118	22	12/09/49	12 39 02	C	4.6

See page II for explanation of terms.

## EARTHQUAKE EPICENTERS

1934 - 1961

LATITUDE		LONGITUDE		DATE	TIME			QUALITY (ACCURACY)	MAGNITUDE
DEG	MIN	DEG	MIN	MO DAY YR	HR	MIN	SEC		
37	28	118	39	08/04/59	19	12	35	C	4.0
37	29	118	35	09/28/50	11	03	22	C	4.1
37	29	121	47	10/31/58	00	26	14	A	4.2
37	29	122	24	10/15/42	13	53	56	B	4.3
37	30	113	06	01/16/43	11	50	18	D	4.
37	30	113	06	11/02/49	02	29	29	D	4.7
37	30	114	20	08/09/53	22	00	00	C	4.5
37	30	115	48	09/29/54	03	48	00	D	4.4
37	30	118	25	02/12/37	22	26		C	4.
37	30	118	32	05/10/36	17	40		C	5.
37	30	118	32	05/15/36	04	34		C	4.
37	30	118	32	05/17/39	03	42		C	4.
37	30	118	32	05/21/39	19	59		C	4.
37	30	118	32	02/24/40	09	38	00	C	4.5
37	30	118	32	05/08/41	14	53	40	C	4.
37	30	118	34	05/08/45	18	08	46	C	4.4
37	30	118	41	06/10/55	18	26	37	B	4.0
37	30	118	42	09/08/60	18	41	36	D	4.0
37	30	118	45	09/18/27	02	07	07		6.
37	30	118	46	12/03/38	17	42		B	5.5
37	30	118	46	12/03/38	17	45		B	4.
37	30	118	46	12/03/38	17	57			4.
37	30	118	46	12/03/38	18	41			4.5
37	30	118	46	12/03/38	22	17			4.
37	30	118	46	12/03/38	22	20			4.
37	30	118	46	12/04/38	18	49			4.
37	30	118	48	11/07/55	18	40	52	C	4.2
37	30	118	48	11/08/55	02	40	52		4.2
37	31	118	44	06/05/60	07	47	07	C	5.2
37	32	118	40	06/22/43	15	31	21	C	4.
37	32	118	40	06/08/44	01	11	55	C	4.0
37	33	118	34	06/18/59	00	29	40	C	4.7
37	34	118	35	12/28/51	02	49	27	B	5.2
37	34	118	44	09/14/41	16	43	32	B	6.
37	34	118	44	09/14/41	16	54	58	B	4.5
37	34	118	44	09/14/41	18	21	19	B	5.5
37	34	118	44	09/14/41	18	39	12	B	6.
37	34	118	44	09/14/41	18	54	18	B	4.
37	34	118	44	09/14/41	21	16	01	B	5.
37	34	118	44	09/27/41	19	48	37	B	4.

See page II for explanation of terms.

## EARTHQUAKE EPICENTERS

1934 - 1961

LATITUDE	LONGITUDE	DATE	TIME	QUALITY	MAGNITUDE		
DEG	MIN	DEG	MIN	MO DAY YR	HR MIN SEC	(ACCURACY)	
37	34	118 44	09/28/41	15 05 14	B	4.	
37	34	118 44	10/23/41	20 44 31	B	4.5	
37	34	118 44	10/24/41	17 48 57	B	4.	
37	34	118 44	11/15/41	16 43 05	B	4.	
37	34	118 44	12/18/41	20 59 00	B	4.	
37	34	118 44	12/31/41	06 48 44	B	5.5	
37	34	118 44	12/31/41	08 08 15	B	4.	
37	34	118 44	12/31/41	11 02 25	B	4.	
37	34	118 44	12/31/41	11 14 57	B	4.	
37	34	118 44	12/31/41	18 05 44	B	4.5	
37	34	118 44	01/01/42	03 41 01	B	4.5	
37	34	118 44	02/04/42	03 21 15	B	4.	
37	34	118 44	02/04/42	03 25 26	B	4.	
37	34	118 44	02/04/42	03 32 03	B	4.5	
37	34	118 44	02/26/42	18 32 39	B	4.	
37	34	118 44	02/27/42	01 22 50	C	4.	
37	34	118 44	06/05/42	03 19 38	C	4.	
37	34	118 44	07/06/42	21 11 40	C	4.5	
37	34	118 44	07/08/42	10 05 47	C	4.	
37	34	118 44	08/20/42	11 11 48	C	4.	
37	34	118 44	08/20/42	12 09 38	C	4.	
37	34	118 44	08/20/42	15 26 31	C	4.	
37	34	118 44	08/21/42	23 36 41	C	4.	
37	34	118 44	09/07/42	19 50 11	C	4.	
37	34	118 44	10/30/42	00 55 18	C	4.	
37	34	118 44	12/05/42	18 52 07	B	4.5	
37	34	118 44	01/01/43	22 24 17	C	4.	
37	34	118 44	02/18/43	14 53 19	C	4.	
37	34	118 44	11/03/43	04 23 39	C	4.	
37	35	118 25	04/08/40	13 34 39	B	4.	
37	35	118 28	08/22/58	23 42 02	C	4.0	
37	36	115 48	07/28/38	00 00	D	4.	
37	36	115 48	07/28/38	00 06	D	4.	
37	36	115 48	07/28/38	00 38	D	4.5	
37	36	115 48	07/28/38	06 09	D	4.	
37	36	118 16	06/27/37	04 26	C	4.	
37	36	118 26	01/11/47	11 57 48	C	4.4	
37	36	118 30	12/31/54	16 56 53	D	4.0	
37	36	122 48	10/02/34	20 20	D	4.	
37	36	122 48	10/02/34	20 30	D	4.	

See page II for explanation of terms.

## EARTHQUAKE EPICENTERS

1934 - 1961

LATITUDE		LONGITUDE		DATE	TIME	QUALITY	MAGNITUDE
DEG	MIN	DEG	MIN	MO DAY YR	HR MIN SEC	(ACCURACY)	
37	37	121	47	04/26/43	11 54 00	A	4.1
37	38	118	18	10/30/53	07 35 45	C	4.4
37	38	118	52	07/22/40	23 00 33	B	4.5
37	38	121	52	03/29/43	11 45 55	A	4.2
37	39	122	27	03/22/57	23 14 35	A	4.4
37	39	122	29	03/23/57	00 26 55	A	4.0
37	40	114	20	09/26/61	21 46 20	D	4.3
37	40	115	20	03/30/34	16 26	C	4.5
37	40	115	20	03/30/34	18 51	D	4.
37	40	115	20	03/31/34	00 11	D	4.5
37	40	115	20	03/31/34	08 24	D	4.
37	40	115	20	03/31/34	22 13	D	4.
37	40	118	18	10/24/49	02 22 33	C	4.1
37	40	118	23	04/13/49	07 58	C	4.5
37	40	118	25	12/16/38	10 48	C	4.
37	40	118	40	08/20/54	08 00 45	C	4.4
37	40	118	40	09/22/54	07 01 55	C	4.1
37	40	122	29	03/22/57	19 44 21	A	5.3
37	41	121	36	05/02/46	01 26 12	A	4.6
37	41	121	43	04/21/43	23 39 44	A	4.2
37	41	121	46	04/15/43	15 23 04	A	4.0
37	41	121	46	04/15/43	15 31 02	A	4.1
37	42	118	28	09/25/37	12 20	C	4.
37	42	119	17	06/21/57	00 41 25	C	4.6
37	42	119	36	07/04/56	05 57 24	D	4.0
37	42	122	31	03/23/57	08 13 48	A	4.2
37	42	122	34	12/11/58	09 52 27	A	4.7
37	43	122	07	12/29/42	18 18 14	A	4.3
37	43	122	08	12/17/54	07 08 58	B	4.5
37	45	122	11	10/13/52	00 34 09	B	4.2
37	48	122	12	03/08/37	10 31	D	4.5
37	49	118	35	04/02/58	21 54 37	C	4.2
37	52	118	30	10/10/36	18 49	C	4.
37	53	118	30	03/09/37	15 41	B	4.
37	53	118	30	05/08/40	17 40 00	C	4.
37	53	122	22	10/22/52	00 45 52	B	4.0
37	54	118	00	05/03/58	17 35 57	D	4.1
37	54	118	32	04/18/35	06 07	C	4.
37	58	122	00	05/31/58	22 07 11	A	4.1
37	58	122	03	10/24/55	04 10 44	A	5.4

See page II for explanation of terms.

## EARTHQUAKE EPICENTERS

1934 - 1961

LATITUDE DEG	LONGITUDE DEG	DATE MO DAY YR	TIME HR MIN SEC	QUALITY (ACCURACY)	MAGNITUDE
38	115	03/28/34	09 36	D	4.
38	115	04/15/34	12 09	D	5.
38	115	04/17/34	03 50	D	4.
38	115	04/17/34	14 46	D	4.
38	115 30	07/04/54	02 44 22	D	4.0
38	116	06/18/34	05 07	D	4.
38	116 30	01/26/60	04 17 36		4.9
38	117	08/03/32	05 47 25	D	4.0
38	117	01/14/36	05 30	D	4.
38	118	03/13/34	16 11	D	4.5
38	118	03/13/34	16 20	D	5.
38	118	03/19/34	10 41	D	4.5
38	118	03/23/34	22 49	D	4.5
38	118	04/02/34	08 05	D	4.5
38	118	04/18/34	02 48	D	4.
38	118	06/01/34	05 55	D	4.
38	118	06/12/34	20 27	D	4.
38	118	09/13/34	18 40	D	4.
38	118	11/30/34	19 31	D	4.
38	118	12/04/34	06 17	D	4.
38	118	12/31/34	05 51	D	4.
38	118	01/21/35	00 09	D	4.
38	118	06/06/35	19 33	D	4.
38	118	01/11/36	06 49	D	4.
38	118	01/20/36	18 32	D	4.5
38	118	03/26/36	22 43	D	4.
38	118	04/19/36	20 19	D	4.
38	118	07/02/36	01 40	D	4.
38	118	07/25/36	19 39	D	4.
38	118	10/07/36	15 01	D	4.
38	118	10/21/36	15 04	D	4.
38	118	10/26/36	12 34	D	4.
38	118	02/19/37	23 06	D	4.5
38	118	02/28/37	18 17	D	4.
38	118	08/19/37	07 03	D	4.5
38	118	03/14/38	21 21	D	4.
38	118	09/23/38	08 20	D	4.5
38	118	05/11/39	02 42	D	4.5
38	118	11/05/39	16 14	D	4.
38	118 30	01/30/34	20 16 31		6.0

See page II for explanation of terms.

## EARTHQUAKE EPICENTERS

1934 - 1961

LATITUDE		LONGITUDE		DATE			TIME			QUALITY (ACCURACY)	MAGNITUDE
DEG	MIN	DEG	MIN	MO	DAY	YR	HR	MIN	SEC		
38		121			09	19/40	08	20	18	D	4.
38		121			09	20/40	18	59		D	4.
38		123			04	18/06	13	12	00		8.3
38		124			11	30/49	08	31	45	C	4.4
38	00	118	36		08	23/37	00	32		C	4.
38	00	118	50		10	01/51	18	19	59	C	4.0
38	00	119	00		11	28/51	04	49	50	D	4.0
38	06	117	54		08	12/56	04	04	06	D	4.0
38	06	118	12		08	28/59	01	52	38	D	4.3
38	10	116	22		07	02/54	10	43	13	B	4.9
38	10	119	17		08	08/46	10	05	14	C	4.2
38	12	116	24		07	17/54	22	02	42	B	4.3
38	12	116	24		07	20/54	00	11	38	D	5.0
38	12	118	12		08	09/43	05	30	04	C	5.5
38	12	118	42		09	09/51	18	49	35	D	4.0
38	12	119	18		09	28/55	09	52	33	C	4.2
38	15	118	22		01	13/58	04	17	27	C	4.2
38	15	118	55		01	31/56	01	37	44	C	4.0
38	15	118	56		12	31/56	17	37	45	B	5.0
38	17	118	58		12	31/56	17	39	24	C	5.1
38	17	119	10		03	29/60	04	01	57	C	4.2
38	17	119	20		12	18/60	23	23	30	C	4.1
38	18	115	48		07	31/38	10	37		D	4.5
38	18	115	48		07	31/38	12	42		D	4.
38	18	116	06		07	11/42	16	41	48	D	5.
38	18	116	06		07	11/42	16	45	42	D	4.5
38	18	117	54		03	17/46	14	45	53	D	5.0
38	18	118	18		02	19/37	09	09		C	5.
38	18	119	11		03	29/60	03	31	12	C	4.0
38	20	118	40		08	08/55	10	35	35	B	5.2
38	21	118	34		03	05/59	06	41	38	C	4.2
38	22	119	35		04	09/60	04	37	55	C	4.0
38	24	118	30		02	25/42	16	12	24	D	4.
38	25	118	15		05	18/61	11	37	50	C	4.2
38	27	118	37		07	06/56	03	31	35	B	4.9
38	28	117	53		01	21/60	14	29	56	C	4.2
38	28	117	53		01	21/60	15	27	21	C	4.1
38	30	118	00		04	27/46	02	18	4	D	4.7
38	30	118	18		10	20/44	01	13	05	D	4.0
38	30	118	30		11	13/52	00	55	16	D	4.8

See page II for explanation of terms.

## EARTHQUAKE EPICENTERS

1934 - 1961

LATITUDE		LONGITUDE		DATE			TIME			QUALITY	MAGNITUDE
DEG	MIN	DEG	MIN	MO	DAY	YR	HR	MIN	SEC	(ACCURACY)	
38	32	122	31	04	05	56	04	29	13	B	4.4
38	32	122	31	04	05	56	04	29	32	C	4.2
38	35	117	50	05	11	39	18	04		C	5.5
38	35	117	50	05	11	39	20	59		C	4.5
38	35	117	50	05	13	39	02	49		C	4.5
38	35	117	50	05	17	39	18	19		C	4.5
38	35	117	50	05	20	39	03	12		C	4.
38	35	117	50	07	08	40	10	04	45	C	4.5
38	35	117	58	05	12	39	07	49		C	4.
38	35	122	22	12	16	59	02	28	42	C	4.1
38	36	117	42	11	20	52	11	33	17	D	4.0
38	36	117	48	06	21	39	11	28		C	4.5
38	36	117	48	09	20	39	11	15		D	4.
38	36	118	00	11	14	52	23	24	18	D	4.2
38	36	118	00	11	14	52	23	33	07	D	4.1
38	36	118	30	08	18	42	21	55	24	D	5.
38	36	118	36	11	14	52	08	05	42	D	4.2
38	37	122	08	11	28	49	08	31	54	B	4.0
38	37	122	21	04	20	58	21	06	58	B	4.0
38	39	118	30	03	18	59	14	20	36	B	4.3
38	41	119	39	02	06	43	08	47	19	C	4.3
38	42	118	12	11	12	52	03	01	51	D	4.2
38	42	119	00	01	02	49	22	03	54	D	4.5
38	42	119	36	12	14	42	12	13	51	D	4.0
38	42	120	18	03	05	46	15	04	27	C	4.1
38	43	119	44	12	20	42	05	47	39	B	4.5
38	44	119	41	12	17	42	15	07	42	C	5.5
38	45	116	30	04	14	54	11	43	27	D	4.3
38	45	118		12	21	32	06	10	05		7.2
38	45	118		01	05	33	06	50	20		5.7
38	48	116	06	03	16	59	17	36	27	D	4.1
38	48	117	24	03	07	52	01	00	42	D	4.0
38	48	117	48	06	03	40	05	42	48	D	4.
38	48	117	54	09	12	51	14	12	30	D	4.1
38	48	120	06	08	06	37	03	23		D	4.5
38	49	119	59	03	22	53	05	19	00	A	5.0
38	49	119	59	03	22	53	14	10	25	B	4.3
38	5	119		08	25	34	13	09		D	4.
38	53	118	10	06	08	55	12	22	11	B	4.5
38	54	115	30	01	04	58	17	27	34	D	4.5

See page II for explanation of terms.

## EARTHQUAKE EPICENTERS

1934 - 1961

LATITUDE		LONGITUDE		DATE	TIME			QUALITY	MAGNITUDE
DEG	MIN	DEG	MIN	MO DAY YR	HR	MIN	SEC	(ACCURACY)	
38	56	118	07	05/08/55	10	38	31	B	4.5
38	56	122	52	05/07/55	11	50	39	B	4.6
38	56	122	52	05/07/55	14	56	15	B	4.2
38	58	118	15	06/19/55	19	20	00	B	5.2
38	59	118	42	12/22/55	12	05	07	B	4.8
38	59	118	42	12/22/55	12	06	54	C	4.6

See page II for explanation of terms.

## EARTHQUAKE EPICENTERS

1934 - 1961

LATITUDE DEG	LONGITUDE DEG	DATE MO DAY YR	TIME HR MIN SEC	QUALITY (ACCURACY)	MAGNITUDE
39	116	06/07/34	20 51	D	4.0
39	116	11/08/34	13 48	D	4.0
39	116	11/01/38	13 52	D	4.5
39	117	04/21/34	23 18	D	4.0
39	117	04/21/34	23 22	D	4.5
39	117	09/24/34	03 20	D	4.0
39	117	09/25/34	07 14	D	4.0
39	117	04/25/37	04 28	D	4.5
39	117	04/28/39	21 59	D	4.5
39	118	09/06/34	06 57	D	4.0
39	118	10/16/34	23 12	D	4.0
39	118	11/14/52	09 05 42	D	4.1
39	118	01/01/55	12 13 54		5.1
39	118	01/02/55	22 07 00		4.2
39	118	01/05/55	08 20 40		4.2
39	118	01/07/55	07 41 14		4.1
39	118	01/07/55	08 00 41		4.2
39	118	01/08/55	18 09 50		4.0
39	118	01/08/55	22 32 53		4.2
39	118	01/09/55	09 10 50		5.0
39	118	01/09/55	11 58 40	C	4.2
39	118	01/11/55	10 21 40		4.7
39	118	01/12/55	03 21 25		4.0
39	118	01/12/55	11 57 37		4.1
39	118	01/15/55	20 47 02		4.2
39	118	01/19/55	01 53 48		4.1
39	118	01/19/55	02 16		4.3
39	118	01/19/55	03 29		4.5
39	118	01/19/55	03 29 21		4.4
39	118	01/22/55	19 34 19	C	4.1
39	118	01/25/55	23 26 46		4.7
39	118	01/26/55	09 40 21		4.1
39	118	02/12/55	11 29		4.6
39	119	10/13/36	12 28	D	4.0
39	119	10/20/54	19 53 52	D	4.4
39 00	118 02	12/31/55	13 51 04	B	4.5
39 00	118 30	06/19/55	19 25 16	D	5.0
39 00	119 12	01/11/39	22 00	D	5.5
39 00	119 54	03/28/48	18 26 20	D	4.6
39 02	118 04	03/08/56	07 26 20	B	4.6

See page II for explanation of terms.

## EARTHQUAKE EPICENTERS

1934 - 1961

LATITUDE		LONGITUDE		DATE	TIME			QUALITY (ACCURACY)	MAGNITUDE
DEG	MIN	DEG	MIN	MO DAY YR	HR	MIN	SEC		
39	04	123	02	11/10/54	18	07	21	B	4.4
39	05	118	49	06/23/59	14	35	00	B	6.1
39	05	119	57	01/22/51	15	14	53	B	4.8
39	06	117	42	11/15/52	02	29	52	D	4.3
39	06	117	42	11/15/52	04	38	10	D	4.0
39	06	118	06	01/18/58	16	33	35	D	4.4
39	06	118	10	03/30/55	09	24	28	C	4.3
39	06	118	48	06/23/59	15	04	34	D	5.5
39	06	118	48	06/23/59	15	22	45	D	4.2
39	07	118	02	02/16/55	00	46	40	B	4.1
39	07	118	47	06/23/59	14	32	35	C	4.4
39	08	118	04	12/05/56	18	05	15	B	4.1
39	10	118	07	03/13/55	21	08	27	B	4.0
39	10	118	10	06/06/55	09	20	10	C	4.3
39	11	118	07	07/03/55	17	48	21	B	4.3
39	11	118	07	12/01/55	15	31	16	C	4.0
39	11	118	07	04/09/56	04	42	25	B	4.3
39	11	122	12	12/04/43	20	13	43	C	4.0
39	11	123	41	10/31/57	02	47	46	B	4.7
39	12	117	30	07/02/36	16	29		D	5.0
39	12	118	00	05/03/55	18	17	01	C	4.0
39	12	118	00	04/25/57	06	45	46	D	4.2
39	12	118	12	05/29/55	04	44	06	D	4.0
39	12	118	18	06/11/57	16	57	55	D	4.2
39	12	118	33	03/08/55	20	05	17	C	4.5
39	12	118	48	06/29/59	05	20	22	D	4.1
39	13	118	12	09/29/55	05	40	51	C	4.5
39	13	122	14	11/15/43	05	36	28	C	4.0
39	15	118	02	08/09/55	05	24	21	C	4.2
39	15	118	04	04/26/57	18	03	07	C	4.0
39	15	119		06/25/33	20	45	27		6.1
39	16	118	35	05/13/56	04	10	03	B	4.3
39	16	120	12	08/12/61	04	57	20	B	4.0
39	17	118	03	10/06/55	07	15	42	C	4.1
39	17	118	26	10/17/57	10	14	09	C	4.6
39	18	117	12	04/11/51	15	06	25	D	4.0
39	18	117	24	08/04/61	16	56	04	D	4.8
39	18	117	48	02/19/55	23	49	20	C	4.1
39	18	117	48	02/19/55	23	50	07	C	4.8
39	18	118	06	03/11/55	14	23	16	D	4.5

See page II for explanation of terms.

## EARTHQUAKE EPICENTERS

1934 - 1961

LATITUDE	LONGITUDE	DATE	TIME	QUALITY	MAGNITUDE
DEG	MIN	DEG	MIN	(ACCURACY)	
39 18	118 30	07/06/54	22 07 41	A	6.0
39 18	118 30	07/06/54	22 53	D	4.1
39 18	118 30	07/06/54	23 11 18	D	4.1
39 18	118 30	07/06/54	23 57 07	D	4.1
39 18	118 30	07/07/54	00 22 58	D	4.4
39 18	118 30	07/07/54	01 29 51	D	4.1
39 18	118 30	07/07/54	02 22 45	D	4.1
39 18	118 30	07/07/54	04 33 53	D	4.1
39 18	118 30	07/07/54	06 11 08	D	4.6
39 18	118 30	07/07/54	10 31 32	D	4.1
39 18	118 30	07/07/54	10 52 48	D	4.4
39 18	118 30	07/07/54	12 40 53	D	4.2
39 18	118 30	07/07/54	16 02 24	D	4.2
39 18	118 30	07/07/54	18 00 55	D	4.3
39 18	118 30	07/07/54	21 47 47	D	4.1
39 18	118 30	07/07/54	23 50 45	D	4.3
39 18	118 30	07/08/54	02 13 55	D	4.8
39 18	118 30	07/08/54	04 08 19	D	4.5
39 18	118 30	07/08/54	06 58 36	D	4.3
39 18	118 30	07/08/54	12 55 10	D	4.7
39 18	118 30	07/08/54	19 31 57	D	5.3
39 18	118 30	07/09/54	08 50 03	D	4.9
39 18	118 30	07/10/54	01 22 20	D	4.6
39 18	118 30	07/11/54	00 18 02	D	4.
39 18	118 30	07/11/54	07 04 00	D	4.6
39 18	118 30	07/11/54	09 58 12	D	4.6
39 18	118 30	07/12/54	10 17 06	D	4.5
39 18	118 30	07/12/54	16 05 25	D	5.1
39 18	118 30	07/16/54	11 55 20	D	4.0
39 18	118 30	07/17/54	00 02 16	D	4.2
39 18	118 30	07/17/54	01 53 11	D	4.4
39 18	118 30	07/20/54	01 41 55	D	4.1
39 18	118 30	07/20/54	15 28 12	D	4.1
39 18	118 30	07/20/54	17 56 04	D	4.
39 18	118 30	07/28/54	23 17 16	D	4.0
39 18	118 30	07/30/54	02 00 10	D	5.1
39 18	118 30	07/31/54	13 54 35	D	4.3
39 18	118 30	07/31/54	17 24 14	D	4.5
39 18	118 30	07/31/54	17 31 16	D	4.3
39 18	118 30	08/02/54	10 18 53	D	5.4

See page II for explanation of terms.

## EARTHQUAKE EPICENTERS

1934 - 1961

LATITUDE		LONGITUDE		DATE			TIME			QUALITY (ACCURACY)	MAGNITUDE
DEG	MIN	DEG	MIN	MO	DAY	YR	HR	MIN	SEC		
39	18	118	30	08	03	54	21	24	54	D	4.7
39	18	118	30	08	05	54	05	03	08	D	4.7
39	18	118	30	08	06	54	15	41	16	D	4.2
39	18	118	30	08	09	54	14	28	34	D	4.
39	18	118	30	08	10	54	06	23	10	D	4.
39	18	118	30	08	10	54	23	00	41	D	4.
39	18	118	30	08	10	54	23	04	22	D	4.
39	18	118	30	08	16	54	06	29	42	D	4.1
39	18	118	30	08	22	54	10	50	08	D	4.
39	18	119	24	03	30	43	00	00	47	D	4.2
39	18	119	48	11	25	47	18	09	00	C	4.5
39	18	120	12	09	08	47	05	52	00	B	4.5
39	18	120	12	09	08	47	07	13	00	B	4.7
39	18	122	53	08	14	52	06	47	07	C	4.0
39	19	118	12	12	16	54	11	07	13	A	7.2
39	19	118	12	12	16	54	13	15	03	B	5.0
39	19	118	28	03	10	56	14	07	56	C	4.2
39	20	118	00	03	26	55	03	51	28	B	4.2
39	20	118	03	01	28	56	22	55	26	C	4.2
39	21	118	15	01	19	55	02	10	10	C	4.6
39	22	120	09	04	07	54	07	05	02	B	4.3
39	23	118	00	11	25	55	18	26	49	C	4.2
39	23	118	03	11	25	55	16	30	01	C	4.3
39	24	118	03	12	01	55	10	24	57	C	4.3
39	24	118	06	05	28	58	15	16	50	D	4.1
39	24	118	30	04	27	57	05	39	27	D	4.2
39	25	118	00	05	30	55	21	28	26	C	4.5
39	25	118	05	11	21	55	20	25	33	C	5.5
39	25	118	05	11	21	55	20	40	35	D	4.4
39	25	118	15	03	14	55	18	23	47	C	4.7
39	25	118	32	07	06	54	11	13	20	A	6.8
39	25	118	32	07	06	54	11	27		D	4.8
39	25	118	32	07	06	54	11	41		D	4.5
39	25	118	32	07	06	54	11	49	00	D	5.7
39	25	118	32	07	06	54	12	54	00	D	4.5
39	25	118	32	07	06	54	12	56	30	D	4.9
39	25	118	32	07	06	54	13	15	11	D	5.2
39	25	118	32	07	06	54	13	36	01	D	4.5
39	25	118	32	07	06	54	14	55	15	D	4.5
39	25	118	32	07	06	54	15	51	21	D	4.4

See page II for explanation of terms.

## EARTHQUAKE EPICENTERS

1934 - 1961

LATITUDE DEG	LATITUDE MIN	LONGITUDE DEG	LONGITUDE MIN	DATE MO DAY YR	TIME HR MIN SEC	QUALITY (ACCURACY)	MAGNITUDE
39	25	118	32	07/06/54	17 38 25	D	4.2
39	25	118	32	07/06/54	17 57 37	D	4.1
39	25	118	32	07/06/54	17 57 40	D	4.3
39	25	119	47	05/09/52	15 31 32	C	5.1
39	26	118	00	04/02/55	02 22 51	C	4.2
39	26	118	05	07/04/55	12 37 13	C	4.1
39	26	120	24	03/30/43	21 07 30	C	5.3
39	27	118	01	09/10/55	19 35 34	C	4.4
39	28	118	06	02/11/55	16 12 32	B	4.7
39	28	118	07	05/21/59	17 51 40	C	4.8
39	28	120	20	05/29/54	04 20 20	C	4.1
39	30	117	30	10/23/50	08 12 46	D	4.5
39	30	117	54	12/24/59	11 24 24	D	4.2
39	30	118		12/16/54	14 16 57	B	5.8
39	30	118		12/16/54	15 09 42	B	5.1
39	30	118	00	12/15/54	06 30 40	D	4.0
39	30	118	00	12/16/54	11 11 29	D	6.9
39	30	118	00	12/16/54	11 50 36	D	5.0
39	30	118	00	12/16/54	11 57 30	D	5.0
39	30	118	00	12/16/54	14 24 1	D	5.3
39	30	118	00	12/17/54	20 28 0	D	5.0
39	30	118	00	12/18/54	01 45 38	D	4.7
39	30	118	01	04/04/55	01 36 02	C	4.1
39	30	118	02	01/17/56	18 17 56	B	4.2
39	30	118	03	11/02/55	06 15 17	B	4.6
39	30	118	05	01/13/57	19 35 29	C	4.0
39	30	118	12	03/22/55	04 06 14	C	4.4
39	30	118	30	08/24/54	05 57 46		5.2
39	30	118	30	09/09/54	09 21 10	D	4.9
39	30	118	30	10/16/54	04 32 12	D	4.3
39	30	118	30	08/04/59	05 13 20	D	4.0
39	30	120	00	08/07/44	01 18 54	D	4.2
39	31	118	06	10/06/56	14 19 17	B	4.0
39	31	118	06	02/10/59	18 03 43	C	4.3
39	32	118	05	04/13/55	11 32 57	B	4.4
39	32	118	07	03/23/59	11 49 23	C	4.2
39	32	119	59	09/26/53	03 34 29	B	5.3
39	33	118	01	03/22/55	03 15 40	B	4.4
39	33	118	27	07/26/56	09 53 17	B	5.1
39	33	120	05	12/29/48	12 53 28	B	6.0

See page II for explanation of terms.

## EARTHQUAKE EPICENTERS

1934 - 1961

LATITUDE	LONGITUDE	DATE	TIME	QUALITY	MAGNITUDE	
DEG	MIN	DEG	MIN	(ACCURACY)		
39	33	120 05	01/08/49	03 39 21	B	4.3
39	33	120 05	01/20/49	07 59 23	B	4.8
39	34	118 03	03/13/55	08 41 04	B	4.6
39	34	118 24	07/22/57	17 24 01	B	4.0
39	34	118 29	12/12/55	18 16 34	C	4.0
39	34	120 18	10/01/58	21 42 11	B	4.6
39	35	118 27	08/24/54	05 51 32	A	6.8
39	35	118 27	08/24/54	06 14 50	D	4.1
39	35	118 27	08/24/54	06 32 31	D	4.4
39	35	118 27	08/24/54	06 36 02	D	4.4
39	35	118 27	08/24/54	06 54 10	D	4.3
39	35	118 27	08/24/54	14 47 18	D	4.0
39	35	118 27	08/24/54	21 20 53	D	4.4
39	35	118 27	08/25/54	02 17 13	D	4.8
39	35	118 27	08/25/54	02 49 59	D	4.0
39	35	118 27	08/25/54	12 12 35	D	4.
39	35	118 27	08/25/54	22 21 10	D	4.7
39	35	118 27	08/26/54	12 44 15	D	4.2
39	35	118 27	08/26/54	12 56 15	D	4.6
39	35	118 27	08/27/54	07 05 03	D	4.0
39	35	118 27	08/28/54	04 51 34	D	4.0
39	35	118 27	08/29/54	03 09 51	D	4.2
39	35	118 27	08/29/54	03 41 06	D	4.7
39	35	118 27	08/29/54	03 58 05	D	4.8
39	35	118 27	08/30/54	11 15 58	D	4.1
39	35	118 27	08/30/54	19 11 57	D	4.1
39	35	118 27	08/30/54	19 57 19	D	4.1
39	35	118 27	08/31/54	13 34 07	D	4.0
39	35	118 27	08/31/54	22 19 29	D	4.4
39	36	116 30	02/13/52	07 05 53	D	4.7
39	36	116 41	10/17/50	03 54 12	C	4.5
39	36	117 54	09/25/55	22 11 51	C	4.1
39	36	117 54	11/10/56	20 27 53	D	4.1
39	36	117 54	08/10/60	15 43 51	D	4.0
39	36	118 01	03/23/59	07 10 20	C	6.3
39	36	118 12	08/31/54	22 20 32	D	5.8
39	36	118 12	09/01/54	05 18 46	D	5.5
39	36	118 12	09/01/54	11 29 25	D	4.3
39	36	118 12	09/04/54	04 24 22	D	4.0
39	36	118 12	09/05/54	20 15 59	D	4.4

See page II for explanation of terms.

## EARTHQUAKE EPICENTERS

1934 - 1961

LATITUDE	LONGITUDE	DATE	TIME	QUALITY	MAGNITUDE
DEG	MIN	MO DAY YR	HR MIN SEC	(ACCURACY)	
39	36	118 12 09/08/54	07 17 30	D	4.3
39	36	118 12 09/09/54	22 31 38	D	4.4
39	36	118 12 09/14/54	16 19 02	D	4.
39	36	120 18 05/10/47	08 11 00	B	4.2
39	36	120 28 11/18/60	11 03 14	B	4.4
39	36	120 48 08/27/48	20 59 45	D	4.0
39	37	118 01 03/27/59	13 55 21	C	4.0
39	37	118 02 08/02/59	22 16 40	C	4.4
39	37	119 42 10/26/50	03 18 08	C	4.2
39	37	119 48 01/21/51	06 28 27	B	4.1
39	38	118 06 03/27/59	11 59 48	C	4.2
39	38	119 41 11/10/50	17 28 15	C	4.0
39	39	118 00 03/08/55	23 28 04	B	4.2
39	40	120 33 06/14/59	01 26 32	B	4.5
39	42	119 18 12/03/42	09 44 42	D	5.5
39	42	119 48 07/18/49	15 31 05	D	4.5
39	42	120 06 10/30/59	03 06 33	D	4.1
39	42	120 24 06/22/50	17 13 18	D	4.1
39	43	120 12 04/01/59	18 18 30	B	5.6
39	43	125 31 11/19/50	23 43 31	C	4.2
39	45	121 15 02/08/40	08 05 59		6.0
39	48	117 42 11/18/52	04 04 08	D	4.6
39	48	118 00 01/28/55	15 38 05	C	4.2
39	48	118 06 04/20/59	12 33 36	D	4.1
39	52	118 02 11/23/55	04 24 08	C	4.1
39	54	118 24 01/10/55	13 15 54	D	4.1
39	54	119 18 01/02/51	23 31 21	D	4.4
39	54	119 24 03/04/45	21 00 42	D	4.0
39	54	126 06 11/01/49	11 56 00	D	4.7

See page II for explanation of terms.

## EARTHQUAKE EPICENTERS

1934 - 1961

LATITUDE DEG	LONGITUDE DEG	DATE MO DAY YR	TIME HR MIN SEC	QUALITY (ACCURACY)	MAGNITUDE
MIN	MIN				
40	118	12/20/54	17 36 47	D	5.0
40	119	07/18/41	03 53 42	D	5.
40	121	06/06/34	22 14	D	4.5
40	121	05/01/41	13 29	D	4.5
40	124	09/12/38	06 10	D	5.5
40	124	10/18/38	05 05	D	4.5
40	124	05/01/39	21 54	D	4.5
40	124	09/27/40	17 03	D	4.5
40	124	12/20/40	23 40 42	D	5.5
40	125	08/23/31	18 01 46		5.3
40	125	06/03/36	09 16	D	5.8
40	125	02/11/41	04 51	D	4.5
40 00	116 42	12/05/50	01 11 15	D	4.2
40 00	125 00	02/08/52	04 07 37	D	4.0
40 04	120 42	02/19/51	22 36 07	B	4.2
40 05	119 40	09/21/55	07 37 28	C	4.1
40 05	120 04	12/11/50	22 29 01	C	4.1
40 05	120 04	12/14/50	09 19 59	D	4.0
40 05	120 04	12/14/50	11 02 30	D	4.0
40 05	120 04	12/14/50	13 10 38	D	4.0
40 05	120 04	12/14/50	13 24 19	B	5.6
40 05	120 04	12/14/50	16 41 11	D	4.1
40 05	120 04	12/15/50	18 01 15	D	4.4
40 05	120 04	12/17/50	01 18 44	D	4.0
40 05	120 46	10/26/52	11 36 40	B	4.3
40 06	120 12	12/14/50	08 59 34	D	5.0
40 06	120 12	12/14/50	09 29 54	D	4.8
40 06	125 18	11/02/47	07 01 00	C	4.8
40 06	126 54	06/06/59	07 46 35	D	4.3
40 07	126 07	09/20/59	23 26 45	C	4.4
40 08	118 36	07/04/61	11 09 11	B	5.0
40 08	119 40	03/19/56	15 09 23	C	4.1
40 11	124 45	04/06/61	04 04 45	C	5.1
40 12	124 18	03/27/45	17 06 47	D	4.1
40 12	124 25	09/22/52	11 41 25	C	5.2
40 12	125 06	01/18/42	07 17 17	D	4.1
40 13	123 48	11/10/56	09 06 34	B	4.1
40 13	124 25	01/14/50	19 52 30	C	4.6
40 14	126 49	02/06/51	16 33 12	B	4.8
40 14	126 49	02/06/51	17 06 35	C	4.4

See page II for explanation of terms.

## EARTHQUAKE EPICENTERS

1934 - 1961

LATITUDE	LONGITUDE	DATE	TIME	QUALITY	MAGNITUDE	
DEG	MIN	MO DAY YR	HR MIN SEC	(ACCURACY)		
40	15	124 16	09/08/48	04 28 13	B	4.0
40	15	124 41	12/02/58	17 43 33	C	4.3
40	15	125 15	01/02/35	22 40 58		5.8
40	16	121 14	08/21/49	20 48 16	C	4.5
40	16	123 50	03/14/57	19 27 42	B	4.0
40	16	123 59	03/27/50	19 09 28	C	4.2
40	16	124 25	08/20/59	03 48 56	C	4.2
40	16	124 31	12/22/59	02 38 57	C	4.7
40	16	124 35	09/23/58	03 50 15	B	4.4
40	16	125 38	11/25/54	11 16 35	B	6.1
40	17	124 32	02/07/55	13 49 00	B	4.3
40	17	124 48	10/08/50	12 24 19	B	4.6
40	17	124 48	10/08/51	04 10 35	C	6.0
40	18	120 36	09/27/47	07 40 00	C	4.4
40	18	124 03	05/24/58	23 04 47	A	4.9
40	18	124 14	03/10/56	05 56 14	B	4.5
40	18	124 18	03/14/47	11 36 00	C	4.0
40	18	124 18	03/10/51	08 10 17	D	4.1
40	18	124 24	01/13/50	12 18 31	D	4.3
40	18	124 24	05/19/60	10 14 07	D	4.0
40	18	124 36	12/18/46	14 20 28	C	4.7
40	18	124 48	03/27/48	21 09 36	D	4.0
40	18	124 54	01/12/44	15 02 40	D	5.1
40	18	124 54	03/17/47	08 46 00	C	4.4
40	18	125 00	05/13/41	16 01 54		6.
40	18	125 00	11/17/57	06 32 21	B	4.2
40	18	125 05	05/04/59	20 11 32	B	4.0
40	18	125 06	01/16/44	02 20 29	D	5.1
40	18	125 25	12/05/59	08 13 42	C	5.1
40	18	125 42	12/03/59	15 36 04	D	4.3
40	18	125 48	07/29/44	11 37 15	D	4.5
40	18	126 24	11/29/59	10 30 33	D	4.1
40	18	127 30	09/05/59	08 14 29	D	4.5
40	19	127 04	08/09/60	07 39 18	C	6.2
40	20	124 58	07/24/48	13 23 20	C	4.2
40	20	127 10	08/10/60	11 31 42	C	4.6
40	22	124 28	08/23/49	18 47 20	C	4.0
40	22	125 10	11/17/59	02 02 13	C	4.1
40	22	125 16	07/11/54	03 25 24	B	4.0
40	22	127 28	11/11/60	12 49 32	C	4.5

See page II for explanation of terms.

## EARTHQUAKE EPICENTERS

1934 - 1961

LATITUDE	LONGITUDE	DATE	TIME	QUALITY (ACCURACY)	MAGNITUDE
DEG	MIN	DEG	MIN	MO DAY YR	HR MIN SEC
40	22	127 30	03/01/60	06 00 18	B 4.3
40	23	124 30	08/27/55	07 00 26	C 4.5
40	23	124 41	03/30/47	07 44 00	B 4.6
40	23	124 42	09/06/49	11 20 30	C 4.1
40	23	124 45	10/06/50	15 39 44	C 4.1
40	24	123 36	12/05/48	17 29 22	D 4.1
40	24	124 18	05/04/49	01 34 03	D 4.1
40	24	124 19	11/12/48	23 10 25	B 4.5
40	24	124 42	05/27/47	20 59 00	B 5.2
40	24	125 00	01/13/51	20 31 32	D 4.8
40	24	125 12	09/23/47	13 53 00	C 5.3
40	24	125 18	08/25/51	01 52 21	D 4.2
40	24	125 18	11/13/51	11 24 42	D 4.8
40	24	126 06	02/24/49	11 49 33	D 4.7
40	24	126 12	09/14/49	05 27 42	D 5.0
40	24	126 12	04/05/57	00 04 10	D 4.1
40	24	126 34	01/01/54	17 16 00	B 4.4
40	24	126 36	07/12/44	15 24 30	D 4.7
40	24	126 54	05/19/45	15 07 00	D 6.0
40	24	127 48	05/05/58	22 57 39	D 4.0
40	25	124 11	08/30/55	01 57 15	C 4.1
40	25	127 27	04/29/61	09 19 30	C 5.5
40	26	124 03	11/14/51	08 39 53	B 4.7
40	26	124 07	12/05/60	12 32 01	C 4.1
40	27	121 28	03/20/50	15 22 17	B 5.5
40	28	125 18	04/01/51	19 21 08	C 5.0
40	28	126 05	09/14/56	09 22 12	C 4.2
40	29	121 30	11/14/50	02 04 40	A 4.1
40	29	121 30	11/14/50	02 35 50	A 4.6
40	29	121 30	11/14/50	06 34 32	B 4.5
40	29	121 30	11/14/50	21 55 53	B 4.0
40	29	121 30	11/15/50	03 22 42	B 4.1
40	30	117 15	01/15/46	22 31 56	D 5.1
40	30	117 30	10/03/15	06 52 48	7.8
40	30	121 30	07/07/46	06 55 15	B 5.0
40	30	124	09/09/31	13 40 40	5.8
40	30	124 30	01/22/23	09 04 18	7.2
40	30	124 36	10/02/43	06 56 41	D 4.6
40	30	124 42	08/18/48	19 11 57	D 5.0
40	30	125 00	05/19/51	03 02 53	D 4.0

See page II for explanation of terms.

## EARTHQUAKE EPICENTERS

1934 - 1961

LATITUDE		LONGITUDE		DATE	TIME	QUALITY (ACCURACY)	MAGNITUDE
DEG	MIN	DEG	MIN	MO DAY YR	HR MIN SEC		
40	30	125	15	02/07/37	04 41 34		5.8
40	30	126		12/07/54	04 32 36	D	4.6
40	30	126	08	04/10/54	15 03 58	B	4.7
40	30	126	12	04/25/53	16 34 45	D	4.1
40	30	126	36	10/22/49	03 42 32	D	4.4
40	30	126	54	07/02/59	19 43 59	D	4.2
40	30	126	54	07/02/59	19 59 39	D	4.1
40	30	127	12	09/10/56	04 30 16	D	4.5
40	30	127	30	05/13/50	08 46 10	D	4.5
40	30	127	42	08/08/51	01 47 02	D	4.4
40	32	125	29	04/08/58	10 22 13	C	4.4
40	34	124	13	06/08/60	02 54 19	B	4.3
40	36	117	24	10/17/60	06 07 10	D	4.4
40	36	126	18	10/23/59	20 40 38	D	4.4
40	36	126	18	12/22/61	11 26 45	D	4.9
40	36	126	42	09/12/53	18 54 33	D	4.6
40	40	121	45	10/17/52	11 34 39	C	4.0
40	40	125	46	10/11/56	16 48 50	B	6.0
40	42	124	42	10/22/45	19 26 06	D	4.3
40	42	124	42	05/13/49	02 19 34	D	4.3
40	42	125	24	02/09/41	09 44 42		6.
40	42	125	42	07/31/47	08 16 00	C	4.4
40	42	125	48	10/11/56	17 22 30	D	4.8
40	42	125	48	10/11/56	19 38 58	D	4.3
40	42	126	24	08/30/56	05 24 52	D	5.3
40	44	126	41	04/11/54	13 17 47	C	4.0
40	45	121	33	12/24/53	07 17 39	C	4.0
40	45	124	30	06/06/32	08 44 22		6.4
40	45	125		10/03/41	16 13 08		6.4
40	45	125	48	10/11/56	17 18 19	C	4.8
40	45	125	48	10/13/56	22 55 23	C	4.3
40	45	127	26	06/28/53	12 45 13	C	4.6
40	46	124	47	06/22/54	06 24 49	B	4.2
40	47	123	52	12/30/54	09 16 13	B	4.7
40	47	125	24	01/05/59	05 15 05	C	4.0
40	48	124	24	10/06/41	06 59	D	5.
40	48	124	24	06/03/50	05 39 16	D	4.0
40	48	124	48	07/09/44	02 47 50	D	4.2
40	49	124	05	12/21/54	19 56 29	B	6.5
40	49	124	53	06/06/60	01 17 48	C	5.7

See page II for explanation of terms.

## EARTHQUAKE EPICENTERS

1934 - 1961

LATITUDE DEG	LONGITUDE DEG	DATE MO DAY YR	TIME HR MIN SEC	QUALITY (ACCURACY)	MAGNITUDE
40 54	118 24	07/04/61	04 56 00	D	5.4
40 54	124 12	10/28/49	02 29 16	D	4.5
40 55	127 10	08/19/60	04 07 08	B	4.5
40 57	124 00	01/02/55	02 49 21	C	4.0

See page II for explanation of terms.

## EARTHQUAKE EPICENTERS

1934 - 1961

LATITUDE DEG	LATITUDE MIN	LONGITUDE DEG	LONGITUDE MIN	DATE MO DAY YR	TIME HR MIN SEC	QUALITY (ACCURACY)	MAGNITUDE
41		119		02/27/36	00 40	D	4.5
41		123		06/06/32	08 44 10	D	5.5
41		123		06/06/32	09 26 09	D	4.0
41		124		06/03/35	17 08	D	5.
41		124		07/01/38	18 13	D	5.
41		125		07/15/18	00 23 00		6.5
41		125		10/10/36	01 25	D	5.
41		125	30	01/31/22	13 17 22		7.3
41	00	124	25	11/16/52	21 29 45	C	4.1
41	00	124	54	02/19/48	08 25 09	C	4.8
41	00	125	00	02/17/48	06 01 36	D	4.0
41	00	125	12	03/29/54	13 33 38	D	4.1
41	00	127	24	10/10/60	13 43 33	D	4.0
41	01	125	12	07/15/57	23 23 47	C	4.4
41	02	116	27	11/16/56	08 26 10	B	4.7
41	06	125	19	07/24/59	03 35 54	B	4.4
41	06	126	06	04/09/52	17 11 23	D	4.8
41	08	125	14	03/23/50	13 25 10	C	4.4
41	08	125	18	07/24/59	01 23 09	B	5.8
41	10	126	18	02/09/57	16 38 07	B	5.4
41	12	118	30	06/06/56	23 50 07	D	4.0
41	12	123	30	05/02/45	19 47 54	D	5.0
41	12	124	18	02/10/50	23 41 09	D	4.0
41	12	125	12	02/27/49	13 35 47	D	4.8
41	12	126	17	02/09/57	17 38 25	B	4.7
41	15	125	40	07/24/55	22 22 30	C	4.3
41	17	125	44	06/09/50	13 07 44	C	4.8
41	18	123	24	06/02/50	10 35 51	D	4.2
41	18	123	34	07/17/54	18 55 12	B	4.2
41	18	124	42	12/19/52	21 40 21	D	4.2
41	18	125	30	10/31/59	19 42 14	D	4.5
41	18	126	00	03/24/49	20 56 56	D	5.9
41	21	125	04	12/27/60	10 56 34	C	4.0
41	27	127	19	12/26/57	12 20 35	C	4.7
41	30	119	06	01/10/56	08 37 24	D	4.1
41	30	125		06/04/25	12 02 52		6.0
41	30	125	00	11/08/44	11 08 44	C	4.7
41	30	125	56	02/23/53	07 42 51	C	4.7
41	30	127	15	06/30/55	20 29 16	D	4.0
41	31	125	03	12/27/60	10 35 26	B	5.4

See page II for explanation of terms.

## EARTHQUAKE EPICENTERS

1934 - 1961

LATITUDE		LONGITUDE		DATE	TIME			QUALITY (ACCURACY)	MAGNITUDE
DEG	MIN	DEG	MIN	MO DAY YR	HR	MIN	SEC		
41	32	125	35	09/03/57	16	38	41	B	4.5
41	35	123	45	03/16/52	10	05	15	C	4.3
41	45	125	21	09/26/56	17	53	26	C	4.1
41	54	124	36	05/06/52	17	21	10	D	4.7
41	54	125	40	01/27/60	00	10	37	C	4.4
41	54	126	42	09/28/45	22	24	05	D	6.0
41	55	125	48	08/13/57	14	36	06	C	4.2
41	57	125	37	07/26/57	04	50	22	B	4.3

See page II for explanation of terms.

## EARTHQUAKE EPICENTERS

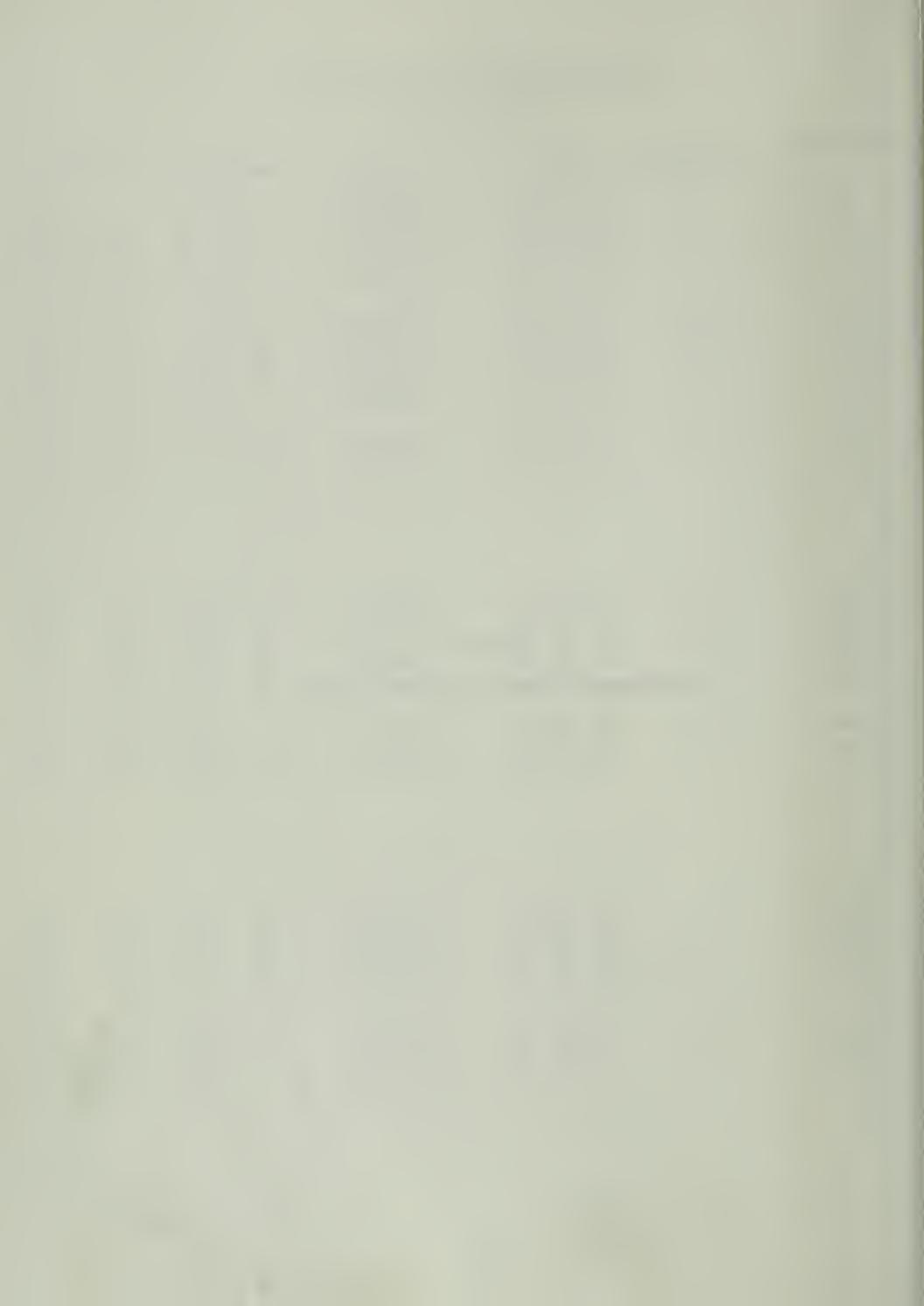
1934 - 1961

LATITUDE		LONGITUDE		DATE	TIME			QUALITY	MAGNITUDE
DEG	MIN	DEG	MIN	MO DAY YR	HR	MIN	SEC	(ACCURACY)	
42		126	30	03/25/49	04	56	48		6.2
42	00	125	06	01/27/50	10	47	20	D	4.7
42	00	127	00	01/10/48	00	45	50	D	5.3
42	00	127	00	07/06/56	02	21	55	D	4.9
42	02	126	42	09/28/59	01	50	32	C	4.1
42	18	118	06	09/29/58	08	53	37	D	4.0
42	23	126	32	10/27/59	06	12	17	C	5.1
42	24	120	00	03/12/58	12	09	16	D	4.5
42	24	126	54	11/19/59	23	53	45	D	5.1
42	30	126	12	10/18/56	07	15	27	D	4.2
42	30	126	36	10/19/56	23	58	31	D	4.7
42	36	119	00	10/09/59	22	55	02	D	4.4
43	00	128	00	01/29/51	05	43	47		5.0
43	12	119	12	10/13/59	07	29	25	D	4.0
43	24	127	18	12/12/55	19	41	20	D	4.2
43	24	127	18	01/10/56	12	32	15	D	4.9
43	30	127	00	12/16/50	10	49	01	D	4.5
43	30	128		08/23/55	15	32	37	D	6.2
43	42	119	42	06/02/59	18	49	00	D	4.7
43	42	128	18	09/26/59	08	20	48	D	6.1
44	00	127	00	06/19/50	18	30	15		4.2
44	00	130	00	10/30/53	18	53	27		4.2
44	30	129	30	08/24/55	06	56	20	D	4.5
44	30	129	30	11/25/57	20	32	25		5.0
44	30	130	00	06/16/51	23	46	58	D	5.5
44	30	130	00	06/17/51	09	40	15	D	6.0
44	36	130	42	11/25/57	18	55	09	D	5.1
44	48	124	42	08/21/59	00	28	17	D	4.6

See page II for explanation of terms.

PART 2

BIBLIOGRAPHIC INDEX TO STATE FAULT MAP



## BIBLIOGRAPHIC INDEX TO STATE FAULT MAP

A bibliography of the geologic maps which were used to compile the fault map is presented in the following pages. An index map to the fault map is located in the pocket on the inside of the back cover and shows the location and area boundaries for each of the geologic references. The references are represented on the index map by the symbols which accompany each item in the bibliography. The first part of each symbol, the letters, refers to the agency, professional society, or individual responsible for the reference material. The remainder of each symbol, the number, refers to the bulletin, report, or map number assigned the bibliographic material by the publisher. As a result, the numbering sequence is discontinuous even though the references are in numerical order for each publisher. Some references such as the California State geologic maps were not numbered by the publisher, but were arbitrarily assigned numbers for convenience.

The absence of faults in any area of the map does not preclude their existence; rather, the area may be unmapped, the available geologic mapping may not have revealed any faults, the exact location of known faults may be uncertain, or the fault length may be too small to be represented at the map scale of 1:500,000.

The heavy fault lines represent known active faults in the State. Whether other faults should be considered active or inactive has not been indicated because the available data are inadequate for such a determination.

Following is a list of faults of known or inferred activity to which reference is made in the text "Elementary Seismology" by Dr. C. F. Richter:

Agua Caliente	Mission Creek
Big Pine	Mohawk Valley
Buena Vista	Nacimiento
Calaveras	Newberry
Elsinore	Norwalk
Garlock	San Andreas
Hayward	San Jacinto
Helendale	Santa Ynez
Imperial	Sierra
Inglewood	White Wolf
Manix*	West side of Fort
Mill Creek	Sage Mountains

Seismic activity is also attributed to offshore faults in the following areas:

Santa Barbara Channel  
San Pedro Channel  
San Miguel Island  
Santa Rosa Island  
Santa Cruz Island  
San Clemente Island  
North margin of Murray Fracture Zone  
North margin of Mendocino Fracture Zone.

The distribution of earthquake epicenters provides evidence of at least some seismic activity on numerous other faults in California. Professor David B. Slemmons of the MacKay School of Mines, University of Nevada in Reno, is presently conducting a study of the evidence of recent fault movement in the Great Basin area of California, Nevada, and Utah. Professor Slemmons has recognized numerous fault scarps in California which show evidence of geologically recent movement.

\*Several northwest-trending faults in the area of and paralleling the Manix fault show evidence of recent activity.

Key to Symbols in Bibliographic Index

- DMG - Division of Mines and Geology
- BR - U. S. Department of the Interior, Bureau of Reclamation
- USGS - U. S. Department of the Interior, Geological Survey
- GSA - Geological Society of America
- AAPG - American Association of Petroleum Geologists
- UC - University of California
- ES - "Elementary Seismology" by C. F. Richter
- SS - Seismological Society of America
- DWR - Department of Water Resources

Bibliographic Index to State Fault Map

<u>Symbol</u>	<u>Title</u>
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BULLETIN No. 116-2  
PART 3

EARTHQUAKE EPICENTER AND FAULT  
MAP OF CALIFORNIA

Northern Section, Notes and Inset Maps

Central Section

Southern Section

LEGEND

- [DMG] STATE DIVISION OF MINES AND GEOLOGY
- [USGS] UNITED STATES GEOLOGICAL SURVEY
- [DWR] STATE DEPARTMENT OF WATER RESOURCES
- [ ] OTHER SOURCES

Note DMG-A and DWR-DC are statewide in coverage







STATE OF CALIFORNIA  
THE RESOURCES AGENCY OF CALIFORNIA  
DEPARTMENT OF WATER RESOURCES  
DIVISION OF RESOURCES PLANNING  
CRUSTAL STRAIN AND  
FAULT MOVEMENT INVESTIGATION

EARTHQUAKE EPICENTER AND FAULT MAP  
OF CALIFORNIA

NORTH AREA

SCALE OF MILES  
10 0 10 20 30

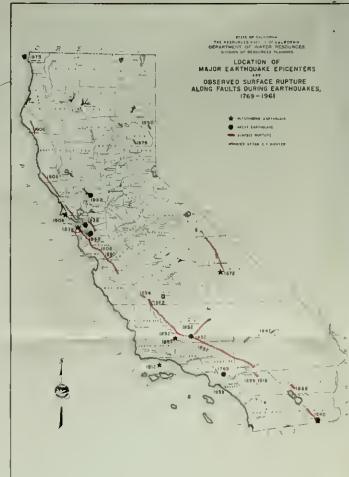
COMPILED BY  
D.M.HILL, C.LAO, V.A.MOORE, and J.E.WOLFE

LEGEND

FAULTS	EARTHQUAKE EPICENTERS			
	SYMBOL	MAGNITUDE	SYMBOL	MAGNITUDE
ACTIVE FAULTS (AFTER C.F. RICHTER)	○	4.0-4.4	□	6.0-6.9
OTHER FAULTS, ACTIVITY NOT ASCERTAINED	◊	4.5-4.9	○	7.0-7.9
APPROXIMATELY LOCATED OR CONCEALED FAULT	△	5.0-5.4	☆	8.0-8.4
STATE WATER FACILITIES	▲	5.5-5.9		

FOR EARTHQUAKES OF MAGNITUDE 6.0 AND GREATER  
DATE OF OCCURRENCE AND MAGNITUDE ARE SHOWN

(7) JULY 21, 1952



NOTE 1: Instrumentally determined epicenters of earthquakes of magnitude 4 and greater which occurred during the years 1934 through 1961 and large-magnitude earthquakes which occurred during the years 1769 through 1933.

Epicenters of thirty large-magnitude earthquakes which occurred during the period from 1769 to 1961 were not instrumentally determined. Five of these were "outstanding" with estimated magnitudes of 7.5, 7.4, 7.3, 7.2, and 7.1. The remaining twenty-five, with estimated magnitudes between 7 and 7½, and 20 were "very large" with estimated magnitudes between 6½ and 7. The approximate locations of the "outstanding" and "large" earthquakes are shown in the inset. After C.F. Richter, "Elementary Seismology."

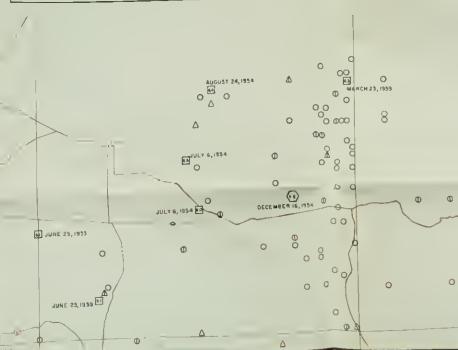
NOTE 2: Where several earthquakes have been reported at specific locations during the same year, only one earthquake of several of a given magnitude is plotted. This procedure is necessary because the epicenters of offshoots of many major earthquakes are often very close together.

NOTE 3: The absence of faults in any area of the map does not preclude their existence; rather, the areas may be unimaged, the available geologic mapping may not have revealed any faults, the east boundary of the map is the Pacific Ocean, and the length may be too small to be represented at the map scale of 1:200,000.

ACKNOWLEDGMENTS

Sources of data on faults: State Division of Mines and Geology, U.S. Geological Survey, State Department of Water Resources, and other state and federal agencies; private agencies; this compilation includes both published and unpublished data.

Sources of data on earthquakes: California Institute of Technology—Professors Hugo Benioff, Clarence R. Allen, and Charles F. Richter; University of Southern California—Professors G. L. St. Amand, University of California, Berkeley—Professors Perry Byerly and Don Tacher, and U.S. Coast and Geodetic Survey.





STATE OF CALIFORNIA  
THE RESOURCES AGENCY OF CALIFORNIA  
DEPARTMENT OF WATER RESOURCES  
DIVISION OF RESOURCES PLANNING  
CRUSTAL STRAIN AND  
FAULT MOVEMENT INVESTIGATION

EARTHQUAKE EPICENTER AND FAULT MAP  
OF CALIFORNIA

CENTRAL AREA

SCALE OF MILES  
0 10 20 30

COMPILED BY  
D M HILL, C LAD, V A MOORE, and J E WOLFE

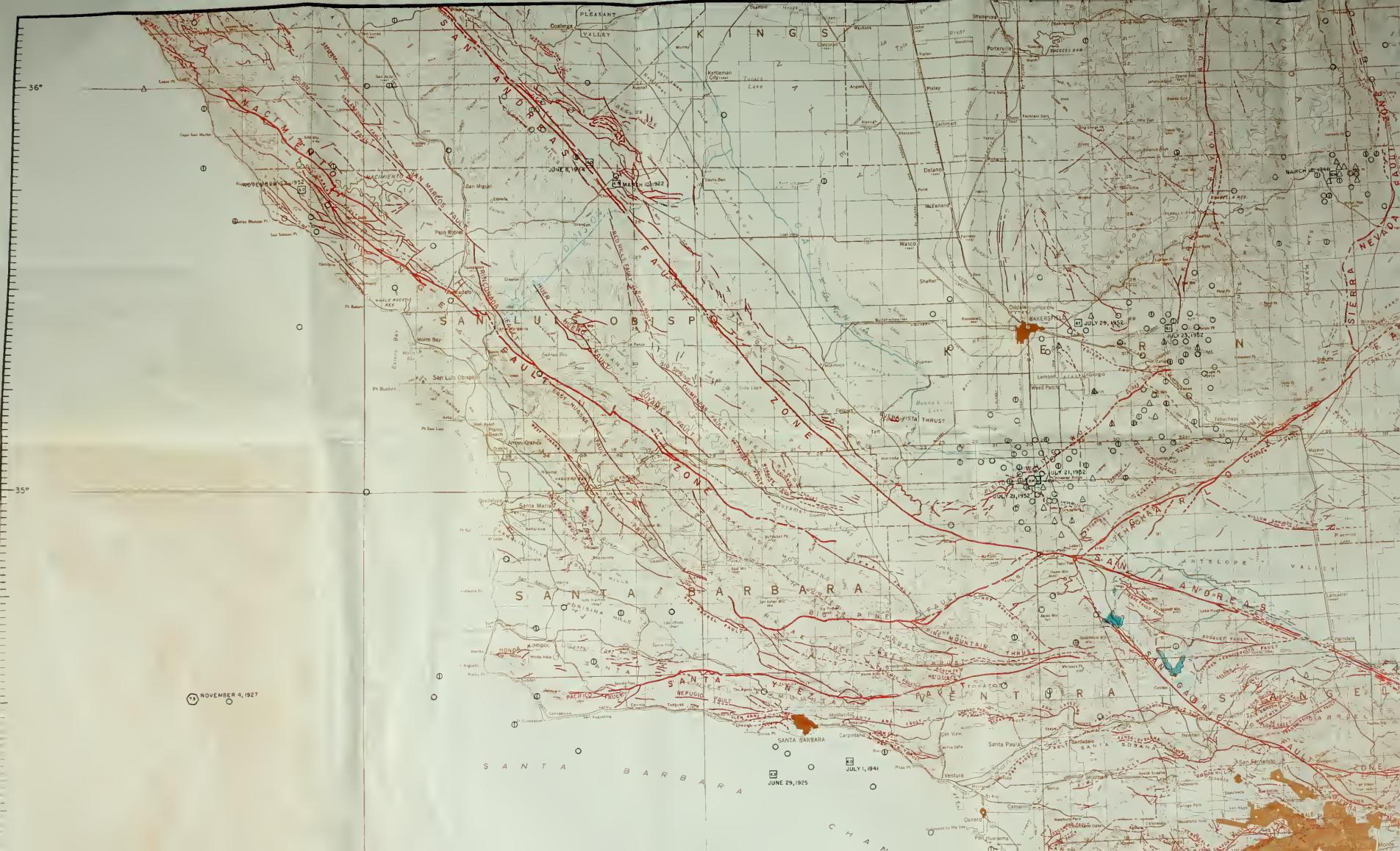
LEGEND

EARTHQUAKE EPICENTERS

SYMBOL	MAGNITUDE	SYMBOL	MAGNITUDE
○	40-44	□	6.0-6.9
○	45-49	○	7.0-7.9
△	50-54	☆	8.0-8.4
△	55-59		

FOR EARTHQUAKES OF MAGNITUDE 6.0 AND GREATER  
DATE OF OCCURRENCE AND MAGNITUDE ARE SHOWN

⑦ JULY 21, 1952





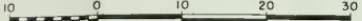
34°

STATE OF CALIFORNIA  
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 DEPARTMENT OF WATER RESOURCES  
 DIVISION OF RESOURCES PLANNING  
 CRUSTAL STRAIN AND  
 FAULT MOVEMENT INVESTIGATION

## EARTHQUAKE EPICENTER AND FAULT MAP OF CALIFORNIA

### SOUTH AREA

SCALE OF MILES



COMPILED BY  
 D. M. HILL, C. LAO, V. A. MOORE, and J. E. WOLFE

121°

120°

119°

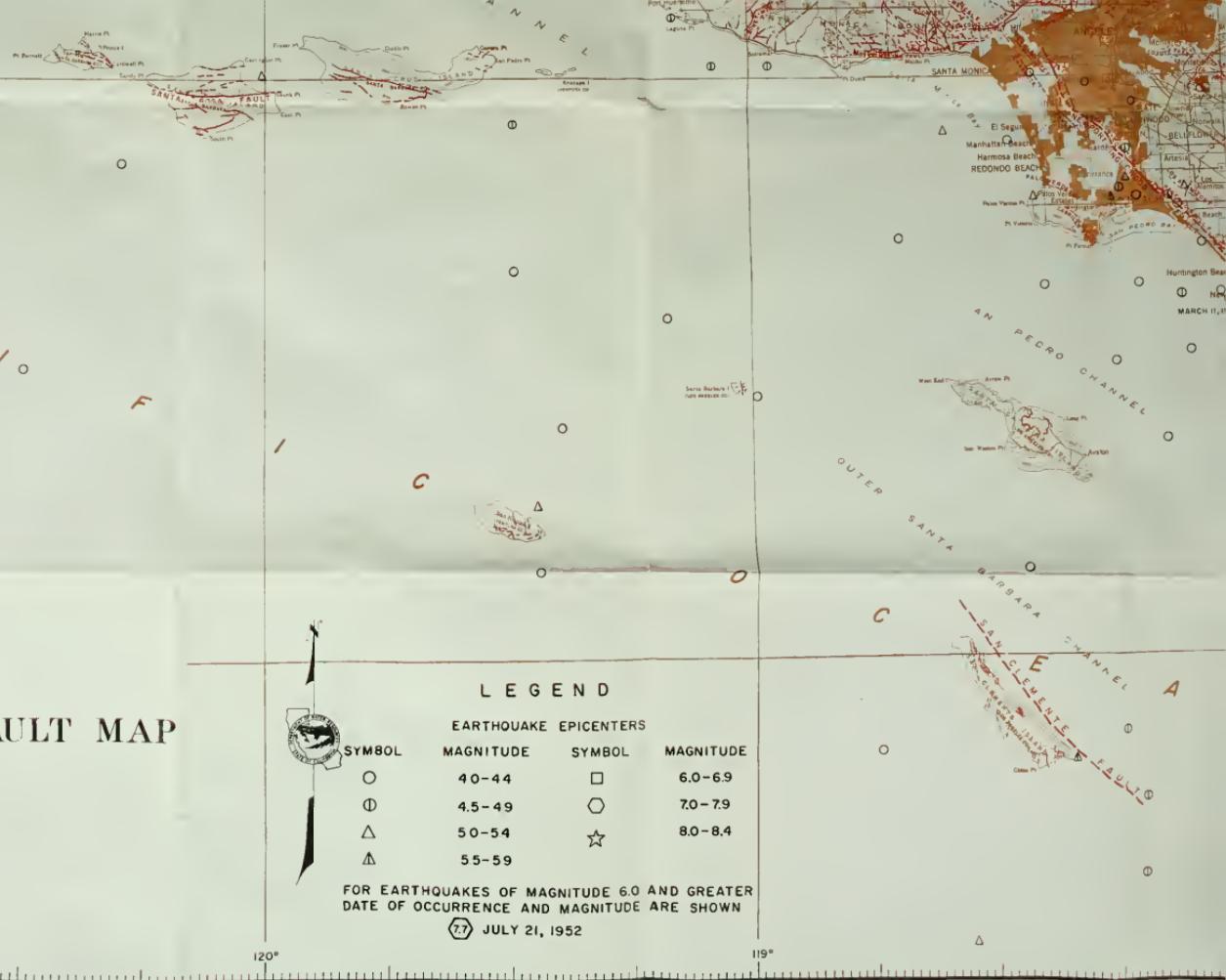


SYMBOL

SYMBOL	EARTHQUAKE EPICENTERS	MAGNITUDE	SYMBOL	EARTHQUAKE EPICENTERS	MAGNITUDE
○	4.0-4.4	6.0-6.9	□	4.5-4.9	7.0-7.9
◊	4.5-4.9	7.0-7.9	○	5.0-5.4	8.0-8.4
△	5.0-5.4	8.0-8.4	☆	5.5-5.9	
▲	5.5-5.9				

FOR EARTHQUAKES OF MAGNITUDE 6.0 AND GREATER  
 DATE OF OCCURRENCE AND MAGNITUDE ARE SHOWN

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